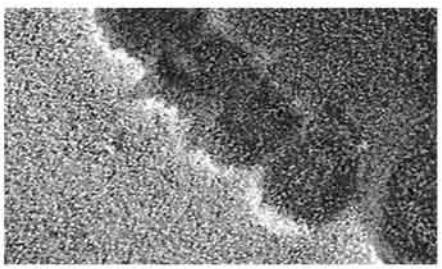
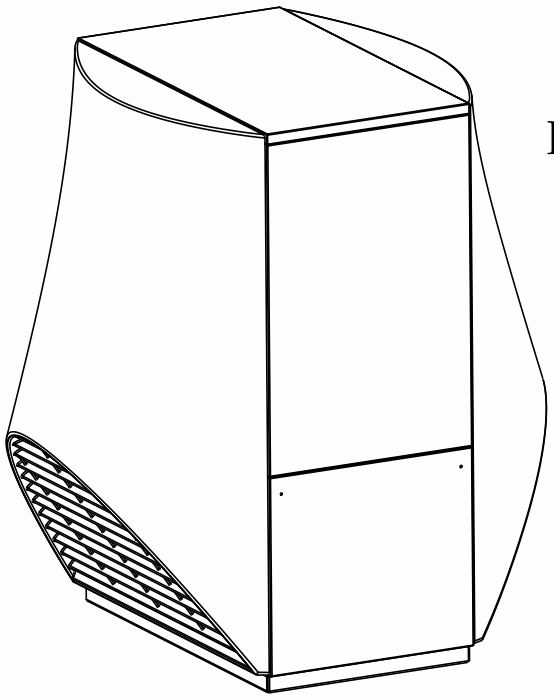
Operating Manual

UK

AIR/WATER HEAT PUMPS

Outdoor Installation





LW... A/RX

alpha innoTec

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Please read first

This operating manual provides important informationon the handling of the unit. It is an integral part of the product and must be stored so that it is accessible in the immediate vicinity of the unit. It must remain available throughout the entire service life of the unit. It must be handed over to subsequent owners or operators of the unit.

Read the operating manual before working on or operating the unit. This applies in particular to the chapter on safety. Always follow all instructions completely and without restrictions.

It is possible that this operating manual may contain instructions that seem incomprehensible or unclear. In case of questions or uncertainty, contact the factory customer service department or the manufacturer's local service partner.

Since this operating manual was written for several different models of the unit, always comply with the parameters for the respective model.

This operating manual is intended only for persons assigned to work on or operate the unit. Treat all constituent parts confidentially. The information contained herein is protected by copyright. No part of this information may be reproduced, transmitted, copied, stored in electronic data systems or translated into another language, either wholly or in part, without the express written permission of the manufacturer.

Symbols

The following symbols are used in the operating manual. They have the following meaning:

Information for operators.

Information or instructions for qualified technicians.

DANGER!
Indicates immediate impending danger resulting in severe injuries or death.

WARNING!
Indicates a potentially serious situation that could result in severe injuries or death.

WARNING!
Indicates a potentially dangerous situation that could result in medium or slight injuries.

ATTENTION
Indicates a potentially dangerous situation, which could result in property damage.

NOTICE.
Emphasised information.

ENERGY SAVING TIP
Indicates suggestions that help to save energy, raw materials and costs.

Reference to other sections of the operating manual.

Reference to other documents of the manufacturer.

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Contents

INFORMATION FOR OPERATORS AND QUALIFIED SPECIALISTS

PLEASE READ FIRST 2
SYMBOLS 2
INTENDED USE 4
DISCLAIMER 4
EC CONFORMITY 4
SAFETY AND SECURITY 4
CUSTOMER SERVICES 5
WARRANTY / GUARANTEE 5
WASTE DISPOSAL 5

INFORMATION FOR OPERATORS

OPERATING PRINCIPLE OF HEAT PUMPS 6
AREA OF UTILISATION 6
HEAT QUANTITY RECORDING 6
OPERATION 6
CARE OF THE UNIT 7
MAINTENANCE OF THE UNIT 7
- Cleaning and Flushing unit components 7

MALFUNCTIONS 8

INSTRUCTIONS FOR QUALIFIED TECHNICIANS

SCOPE OF DELIVERY 9
INSTALLATION AND ASSEMBLY 10
- Installation location 10
- Transport to installation location 10
- Installation 10
- Attaching the air flow baffles 13
- Installation / connection to heating circuit 15
- Condensate discharge 16

PRESSURE RELIEF 16
SEPARATING BUFFER TANK 16
CIRCULATING PUMPS 16
WATER HEATING 17
HOT-WATER TANK 17
ELECTRICAL CONNECTIONS 17
FLUSHING, FILLING AND BLEEDING THE SYSTEM 19
INSULATING THE HYDRAULIC CONNECTIONS 19
COMMISSIONING 20
DISMANTLING 21
TECHNICAL DATA / SCOPE OF DELIVERY 22
PERFORMANCE CURVES
Heating capacity/COP / power consumption / Heat pump pressure loss
- Heating LW 90A/RX 24
- Cooling LW 90A/RX 25
- Heating LW 140A/RX 26
- Cooling LW 140A/RX 27

SOUND PRESSURE LEVEL 28
INSTALLATION PLANS
- LW 90A/RX... 30
- LW 140A/RX 31

HYDRAULIC CONNECTION
- Hydraulic legend 32
- Domestic hot water 33
- Swimming pool 34

TERMINAL DIAGRAMS
- LW 90A/RX • 140A/RX 36
- Comfort board 37

CIRCUIT DIAGRAMS 38

APPENDIX

EC DECLARATION OF CONFORMITY 41
GENERAL CHECKLIST 43
COMPLETION REPORT FOR HEAT PUMP SYSTEMS 45

CUSTOMER SERVICES

- Addresses in the event of a service call 46

We reserve the right to modify technical specifications without prior notice.

© Alpha-InnoTec GmbH

Intended use

The unit may be used only for the intended purpose. That means:

- for heating.
- for cooling.
- for heating hot water.

The unit may be operated only within its technical parameters.

☞ Overview “Technical data / scope of delivery”.

NOTICE
Notify the responsible power supply company of the use of a heat pump or heat pump system.

Disclaimer

The manufacturer will not be liable for damage resulting from unauthorised use of the unit.

The manufacturer’s liability will also be voided in the following cases:

- if work is performed on the unit and its components in a manner that does not comply with the terms of this operating manual;
- if work is performed on the unit and its components in an improper manner;
- if work is performed on the unit that is not described in this operating manual, and this work was not expressly approved in writing by the manufacturer;
- if the unit or components in the unit are modified, redesigned or removed without the express written permission of the manufacturer.

EC conformity

The unit bears the CE mark of conformity.

☞ EC declaration of conformity

Safety and Security

The unit is operationally safe when used for the intended purpose. The construction and design of the unit conform to the state of the art, all relevant DIN/VDE regulations and all relevant safety regulations.

Every person who performs work on the unit must have read and understood the operating manual prior to starting any work. This also applies if the respective person has already worked with such a unit or a similar unit or has been trained by the manufacturer.

Every person who performs work on the unit must comply with the applicable accident prevention and safety regulations. This applies in particular to the wearing of personal safety gear.

DANGER!
Danger of fatal injury due to electric shock!
Electrical connections may be installed only by qualified electricians.

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!

DANGER!
Only qualified technicians (trained heating, cooling, refrigerant and electrical technicians) may perform work on the unit and its components.

WARNING!
Observe safety labels on and in the unit.

WARNING!
Unit contains refrigerants!
Leaking refrigerant could result in personal injury or material damage. Therefore:

- **Shut down unit.**
- **Notify the manufacturer’s authorised service centre.**

ATTENTION
For safety reasons:
Never disconnect the unit from the power supply, unless the unit is being opened.

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

ATTENTION
Install the heat pump only outdoors and operate only with outside air as the heat source. Do not restrict or block the air-conducting sides.

☞ Dimensional drawing and installation plan for respective model.

WARNING!
Never switch on unit if air flow baffles on the unit are removed.

ATTENTION
The integration of the heat pump in ventilation systems is not permissible. The use of the cooled air for cooling purposes is not permitted.

WARNING!
In the air outlet area the air temperature is ca. 5 K below the ambient temperature. Under certain climatic conditions, therefore, an ice layer can form in the air outlet area. Install the heat pump so that the air blower does not blow in the direction of footpaths.

Customer Services

For technical information please contact a qualified technician or the manufacturer's local partner.

☞ Overview “Customer service”.

Warranty / Guarantee

For warranty and guarantee conditions, please refer to the purchase documents.

NOTICE
Please contact your dealer concerning warranties and guarantees.

Waste disposal

When decommissioning the unit, always comply with applicable laws, directives and standards for the recovery, recycling and disposal of materials and components of cooling units.

☞ “Dismantling”.

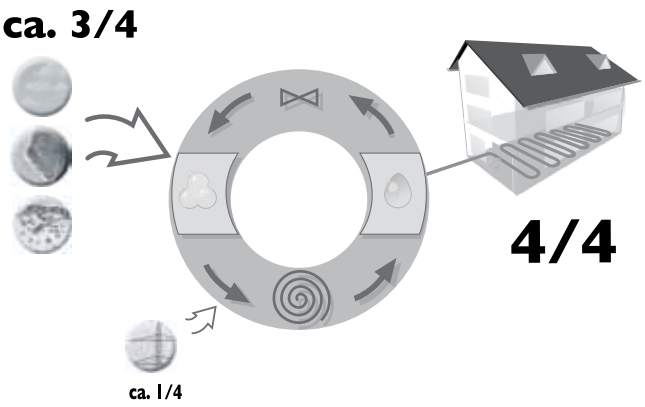
© Alpha-InnoTec GmbH

Operating principle of heat pumps

Heat pumps operate on the principle of a refrigerator: the same technology, only with the opposite effect. The refrigerator extracts heat from foods, which is released into the room through fins on the back.

The heat pump extracts heat from our environment: air, earth or water. The extracted heat is conditioned in the unit and supplied to the heating water. Even when it is extremely cold outside, the heat pump draws enough heat to heat a house.

Example: drawing of a brine/water heat pump with floor heating:



$^4/_4$ = usable energy
approx. $^3/_4$ = environmental energy
approx. $^1/_4$ = external electrical energy

Area of utilisation

Taking into consideration the ambient conditions, limits of application and the applicable regulations, every heat pump can be utilised in new or existing heating systems.

Overview “Technical data / scope of delivery”.

Heat quantity recording

In addition to verification of the unit's efficiency, EEWaermeG also meets the demand for a heat quantity recording (hereafter referred to as HQR). The HQR is mandatory with air/water heat pumps. With brine/water and water/water heat pumps, an HQR may only be set up when a forward flow temperature of ≥ 35 °C has been reached. The HQR must record the total warm energy release (heating and hot water) in the building. In heat pumps with heat quantity recording, the analysis is conducted by the regulator. The regulator displays the thermal energy that is exchanged from the heating system in kWh.

Operation

Your decision to purchase a heat pump or a heat pump system is a long-term contribution to protecting the environment through low emissions and reduced primary energy use.

You can operate and control the heat pump system with the control element of the heating and heat pump regulator.

NOTICE
Make sure that the control settings are correct.

Operating manual of the heating and heat pump regulator.

To ensure that your heat pump or heat pump system operates efficiently and ecologically, the following are especially important:

ENERGY SAVING TIP
Avoid unnecessarily high flow temperatures.
The lower the flow temperature on the hot water side, the more efficient the system.

ENERGY SAVING TIP
Do not leave windows open continuously; ventilate by opening windows wide for a short time as this saves energy and reduces your heating costs.

We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

Care of the unit

The outer surfacesof theunit can be cleaned with a damp cloth and household cleaning products.

Do not use cleaning or care products that contain abrasives, acids and/or chlorine. Such products would destroy the surfaces and could also damage the technical components of the unit.

Maintenance of the unit

The cooling circuit of the heat pump requires no regular, technically-qualified maintenance.

According to EU regulation (EC) 842/2006 of May 17, 2006, leak inspections and maintenance of a log book are required for certain heat pumps!

The criteria for conducting leak inspections and maintaining a log book are based on the hermetic impermeability of the cooling circuit and the refrigerant capacity of the heat pump! No log book is required for heat pumps with a refrigerant capacity of < 3kg. With all other heat pumps, the log book is included with all other delivered materials.

Log book for heat pumps, Section “Information on use of the log book”.

The components of the heating circuit and the heat source (valves, expansion vessels, circulating pumps, filters, dirt traps) should be inspected as well as cleaned as needed – at the very least annually – by a qualified heating or cooling system technician.

The intake and blow-out openings must be inspected for dirt at regular intervals (depending on the installation location) and cleaned, if necessary.

! ATTENTION

Regularly check to ensure that the condensate can drain out of the unit unobstructed. To this end, check the condensate pan in the unit as well as the condensate drain on a regular basis to ensure that they are clean / free from obstructions; clean as needed.

Icing of the protective grating
When temperatures fall below freezing and high levels of humidity are present, ice can form on the protective grating of the air flow baffles. In order to ensure problem-free operations, the ice must be removed on a regular basis.

It is a good idea to have a maintenance contract with a heating installation company. The company will conduct the required maintenance at regular intervals.

CLEANING AND FLUSHING UNIT COMPONENTS

WARNING!
Unit components may be cleaned and flushed only by customer service personnel authorised by the manufacturer. Use only liquids recommended by the manufacturer.
Flushing of the condenser with chemical cleaning agents must be followed by neutralisation of residue and intensive flushing with water. Always observe the technical data of the manufacturer of the heat exchanger.

Malfunctions

In the event of a malfunction, you can detect the cause of the malfunction via the diagnostic program of the heating and heat pump regulator.

Operating manual of the heating and heat pump regulator.

DANGER!
Service and repair work on the components of the unit may be performed only by customer service personnel authorised by the manufacturer.

Overview “Customer service”.

© Alpha-InnoTec GmbH

Scope of delivery

(TWO PACKING UNITS):

Packing unit 1:

Air flow baffles (quantity of 2, each in a separate box)

Packing unit 2:

Compact unit with fully hermetically enclosed compressor, all safety-related components for monitoring of cooling circuit and hose for condensate discharge (connected on heat pump side).

① Inspect delivery for outwardly visible signs of damage.

② Check to make sure that delivery is complete... Any defects or incorrect deliveries must be claimed immediately.

NOTICE.
Note the model.

Overview "Technical data / scope of delivery".

ACCESSORIES NECESSARY FOR OPERATION

ATTENTION
Use only original accessories from the manufacturer of the unit.

The heating and heat pump regulators – functioning as wall regulators, comfort boards as well as control and sensor wires – are necessary for operation of the unit and must be ordered separately.

The heat pump is a functioning unit only with the heating and heat pump regulator and the control and sensor wires.

Heating and heat pump regulator (for wall mounting)

Control and sensor wires are available in various lengths, as required.

ADDITIONAL ACCESSORIES

The installation accessories (vibration decouplers) for air/water indoor installation heat pumps must be ordered separately.

Dew point monitors must be ordered separately.

With the LW... A/RX you must select the electrical heating element for the specific system and order it separately.

Installation and assembly

Observe the following when performing all work:

NOTICE
Always comply with applicable accident prevention regulations, statutory regulations, ordinances and directives.

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

NOTICE
Observe the sound levels of the respective model.

Overview "Technical data / scope of delivery", "Sound" section and "Sound level" overview.

INSTALLATION LOCATION

ATTENTION
Install the unit only outdoors.

Dimensional drawing and installation plan for respective model.

TRANSPORT TO INSTALLATION LOCATION

To prevent damage during transport, always transport the unit to final installation location in its original packaging, using a lifting truck, forklift or crane.

DANGER!
Several people are required to transport the unit. Do not underestimate the weight of the unit.

Overview "Technical data / scope of delivery".

DANGER!
The unit can tip when being removed from the wooden pallet and during transport! This can result in personal injury and damage to the unit.

- **Take suitable precautionary measures to eliminate the danger of tipping.**

DANGER!
Make sure to secure unit against slipping during transport.

ATTENTION
Never use components and hydraulic connections on the unit for purposes of transport.

ATTENTION
Do not damage the hydraulic connections under any circumstances.

ATTENTION
Do not tilt the unit more than a maximum of 45° (in any direction).

INSTALLATION

Place the unit on a solid, level foundation that is capable of bearing weight. Make sure that the foundation is designed for the weight of the heat pump. Materials that meet this requirement can be used for the foundation (concrete, stone slabs, etc.). The ground surface in the air outlet area of the heat pump must be permeable to water.

ATTENTION
In the air outlet area the air temperature is ca. 5 K below the ambient temperature. Under certain climatic conditions, therefore, an ice layer can form in the air outlet area.
Install the heat pump so that the air blower does not blow in the direction of footpaths.

DANGER!
Several people are required to install the unit.

NOTICE
Always comply with the installation plan for the respective model. Adhere to the size and minimum clearances.

Installation plan for respective model.

NOTICE
Set up the unit so that the switch cabinet side (= operating side) is accessible at all times.

© Alpha-InnoTec GmbH

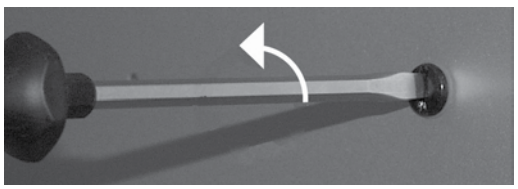
PREPARING FOR INSTALLATION

Proceed as follows:

① Remove lower facing panels on the switch cabinet side (= operator side) and the water connection side of the unit:

1 Quick-release screws
2 Lower facing panel

Loosen quick-release screws. Turn counter-clockwise 90°...



② On both sides, pull lower facing panel upward and outward, detach and set securely aside.

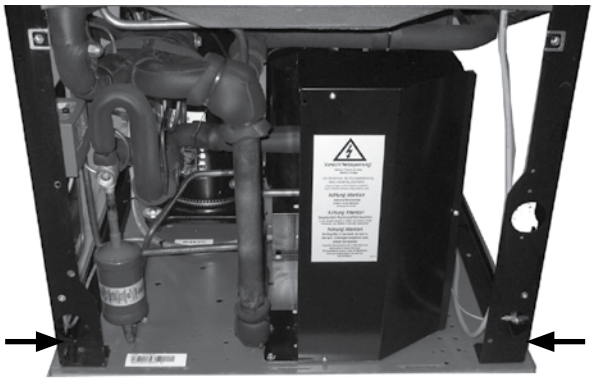
LIFTING THE UNIT WITH PIPES

(ONLY LW 90A/RX...)

The units can be lifted with ¾" pipes (provided by customer) that are suitable for the weight of the respective unit. Special holes are provided in the frame for this purpose.

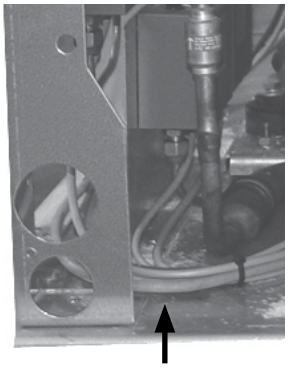
Proceed as follows:

① Insert the pipes through the holes in the frame on the switch cabinet side (= operator side) ...



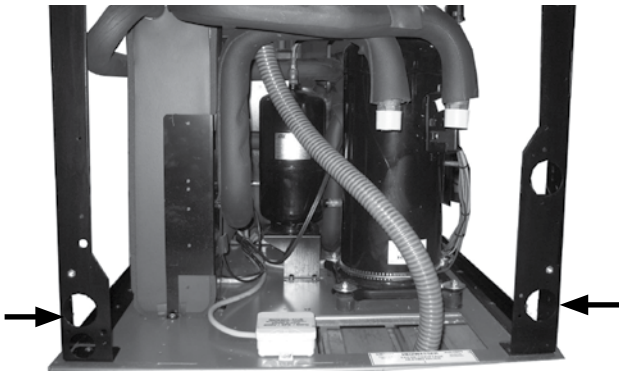
Make sure that pipes do not damage cable assemblies and components in the unit.

Guide pipes carefully past cable assemblies and components in the unit...



② Insert the pipes through the holes in the frame on the water connection side...

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH



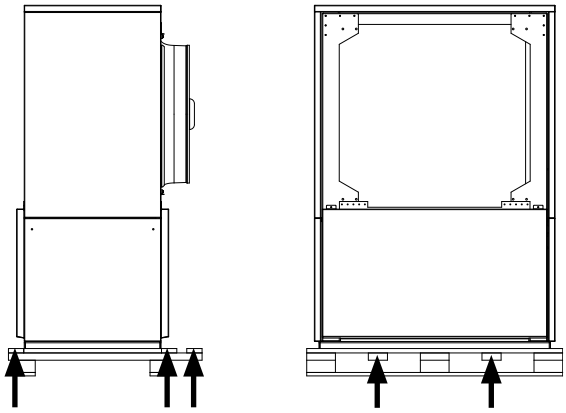
③ Lift unit by the pipes, with at least four persons, and place on the base. Make sure that the frame of the unit is in full contact with the underlying surface...

LIFTING THE UNIT WITH A CRANE

NOTICE.
Models LW 140A/RX and higher must be lifted using a crane.

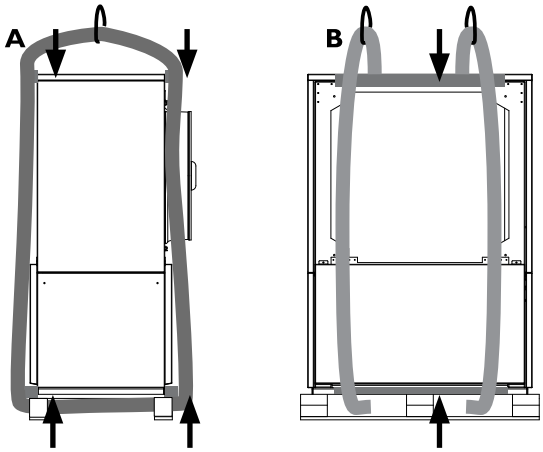
Proceed as follows:

① Remove side laths on the wooden pallet...



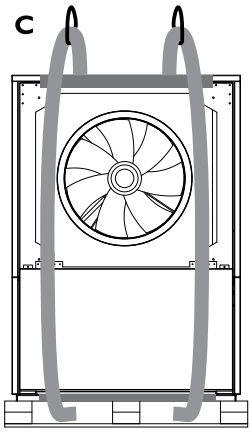
②Guide lifting straps under the unit. Insert laths or beams between the lifting straps and the unit in order to prevent damage to the housing, or remove facing panels...

☞ See removal instructions under “Attaching air flow baffles”.



A Front view (operator side)
B Side view 1

DANGER!
Lifting straps should not be too close together or too near the centre; otherwise the unit may tip!



C Side view 2

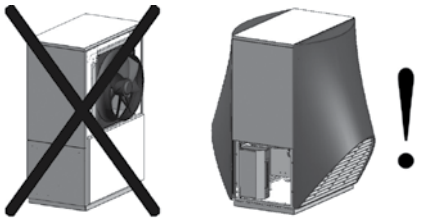
ATTENTION
Guide lifting straps past the fan on the side. Make sure the straps do not press against the ventilator during transport.

③ Lift unit with the crane and place on the base. Make sure that the frame of the unit is in full contact with base.

© Alpha-InnoTec GmbH

ATTACHING THE AIR FLOW BAFFLES

WARNING!
Unit has rotating parts.
For safety reasons, mount the two air flow baffles on the unit before continuing with any other work.



Proceed as follows:

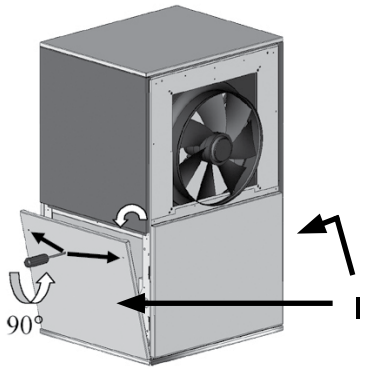
① If you have not already done so, remove lower facing panels on the switch cabinet and water connection side of the unit...

①•①

To do so, loosen the two quick-release screws on the lower facing panels...

①•②

Pull each facing panel forward, detach from the unit and set securely aside...



1 lower facing panels

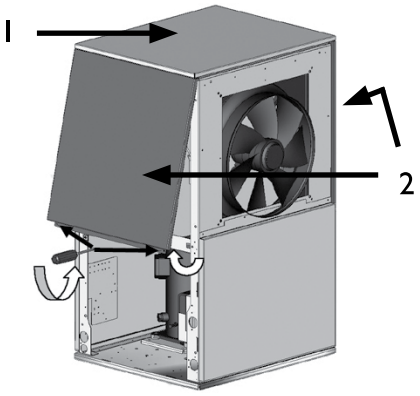
② Remove upper facing panels from unit...

②•①

To do so, loosen the two screws on the lower edges of the upper facing panels...

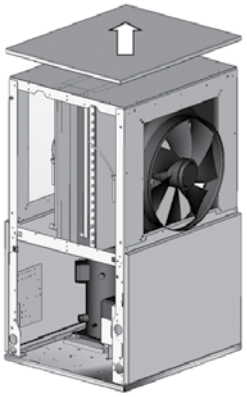
②•②

Pull each facing panel downward and forward, detach from top cover of unit and set securely aside...



1 top cover of unit
2 upper facing panels

③ The top cover of the unit was fastened by the upper facing panels. After removal of the upper facing panels, the top cover is loose. Remove top cover and set securely aside...

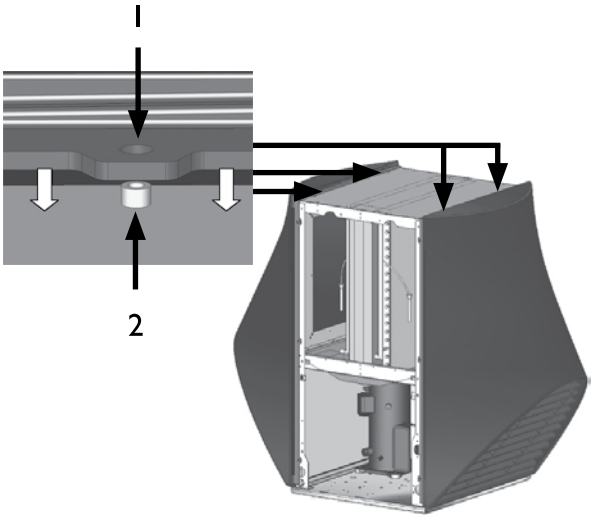


④ Install air flow baffles...

④•①

Suspend air flow baffles in the brass bushes on the top side of the frame...

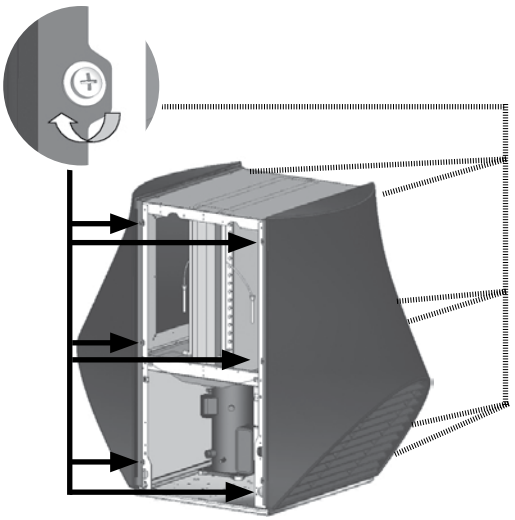
We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH



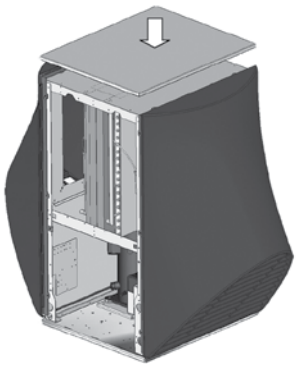
1 eyelet on air flow baffle
2 brass bushing on frame

④•②

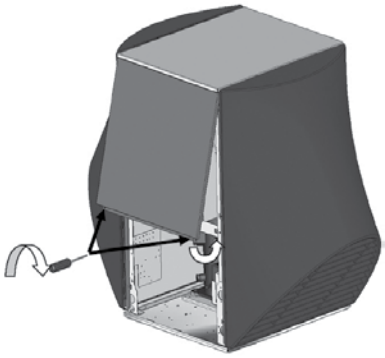
Bolt air flow baffles to the frame on the switch cabinet side (= operator side) and water connection side…



⑤ Return top cover to frame...



⑥ Suspend upper facing panels in the top cover. Bolt to the frame at bottom...



The air flow baffles are now installed. You can now carry out mounting and installation work on the unit, and afterwards attach the lower facing panels.

(see “Electrical connection work”, “Heat pump side connection of control and sensor wires”) ⑥.

! ATTENTION
During extended interruptions in work, close the unit with the lower facing panels.

INSTALLATION / CONNECTION TO HEATING CIRCUIT

! ATTENTION
Connect the unit to the heating circuit according to the hydraulic diagram for the respective model.

“Hydraulic connection” instructions.

© Alpha-InnoTec GmbH

NOTICE
Check to make sure that the diameters and lengths of the pipes for the heating circuit (including the earth lead between the heat pump and the building!) are sufficiently dimensioned.

NOTICE
Circulating pumps must be multi-stage, regulated pumps. They must be able to deliver at least the minimum hot water flow rate required for your model.

☞ Overview "Technical data / scope of delivery", "heating circuit" section.

ATTENTION
The hydraulic system must be equipped with a buffer tank, the required volume of which depends on the model of your unit.

☞ Overview "Technical data / scope of delivery", "heating circuit, buffer tank" section.

ATTENTION
When installing the connections, always secure the connections on the unit against twisting, in order to prevent damage to the copper pipes in the interior of the unit.

Proceed as follows:

① Flush heating circuit thoroughly prior to connecting the unit to the heating circuit...

NOTICE
Contamination and deposits in the heating circuit can cause malfunctions.

② Install shut-off devices for the hot water outflow (forward flow) and hot water inflow (return flow) on the heat pump side.

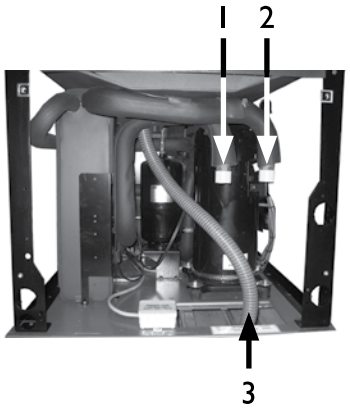
NOTICE
During installation of the shut-off devices, the evaporator and condenser of the heat pump can be flushed, if necessary.

WARNING!
The condenser may be flushed only by customer service personnel authorised by the manufacturer.

③ Connect the unit to the pipes of the heating circuit via vibration decouplers. They must be installed in order to prevent damage from vibrations to the pipes.

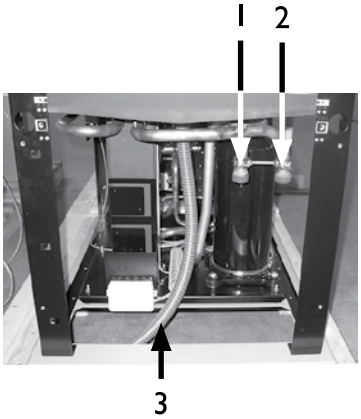
NOTICE
Vibration decouplers are available as accessories.

LW 90A/RX...:



1 Hot water inflow (return flow) connection
2 Hot water outflow (forward flow) connection
3 Condensate water hose

LW 140A/RX:



1 Hot water inflow (return flow) connection
2 Hot water outflow (forward flow) connection
3 Condensate water hose

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

④ Install the condensate water hose in the unit so that there is no contact with refrigerant pipes.

⑤ Make sure that frost-free condensate discharge is ensured.

☞ Installation plan for respective model.

📖 Heat pump planning manual.

⑥ Seal empty pipes on unit side.

CONDENSATE DISCHARGE

The condensate from the air must be discharged frost-free via a condensate pipe with a minimum diameter of 50 mm. For underlying surfaces that are permeable to water, it is sufficient to insert the condensate pipe vertically at least 90 cm into the ground. If the condensate is discharged into drainage or sewage systems, install frost-free with gradient.

Discharge of the condensate into the sewage system is permitted only via a funnel siphon, which must be accessible at all times.

Pressure relief

Equip the heating circuit in accordance with local standards and directives with a safety valve and an expansion tank.

Also install filling and emptying devices, shut-off devices and non-return valves in the heating circuit.

Separating buffer tank

The hydraulic integration of the heat pump is only permissible with a separating buffer tank (**Isolation against vapour diffusion**).

The flow direction of the hot water system must also be rotated via the switching valve during cooling.

☞ hydraulic diagram see page 31

$$V_{\text{separating buffer tank}} = \frac{\text{minimum flow rate of heat circuit volume flow / hour}}{10}$$

☞ For the minimum flow rate of the heat circuit volume flow, see overview “Technical data / Scope of delivery”, “Heating circuit” section.

Circulating pumps

! ATTENTION
Always note the model.
Do not use unregulated circulating pumps.
Circulating pumps and domestic hot water circulation pumps must be multi-stage, regulated pumps.

Water heating

Water heating with the heat pump requires an additional hot water circuit, parallel to the heating circuit. Make sure that the heating water charge is not channelled through the buffer tank of the heating circuit.

📖 “Hydraulic connection” instructions.

Hot-water tank

If the heat pump will be used for heating hot water, you must integrate special hot-water tanks in the heat pump system. The storage volume must be sufficient so that the required hot water quantity is available even during a power cut.

© Alpha-InnoTec GmbH

NOTICE
The heat exchanger surface of the hot water tank must be dimensioned so that the heating capacity of the heat pump is transferred with minimal spreading.

We offer a variety of hot-water tanks for you to choose from. They are optimised for use with your heat pump.

NOTICE
Integrate the hot-water tank in the heat pump system according to the hydraulic diagram for your system.

Electrical connections

Observe the following when performing all work:

DANGER!
Danger of fatal injury due to electric shock!
Electrical connections may be installed only by qualified electricians.

Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!

DANGER!
Observe the relevant EN-, VDE and/or applicable local safety regulations during the installation and during all electrical work.

Comply with technical connection requirements of the responsible power supply company (if required by the latter)!

POWER CONNECTION

It is not necessary to open the electric switch cabinet in order to connect the power to the heat pump. The power is connected at the connection boxes on the water connection side.

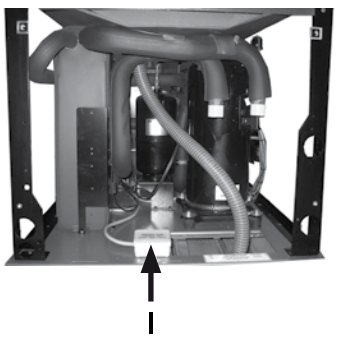
Proceed as follows:

① If the unit is closed, open facing panels...

☞ "Preparing for installation"

② Open connection boxes...

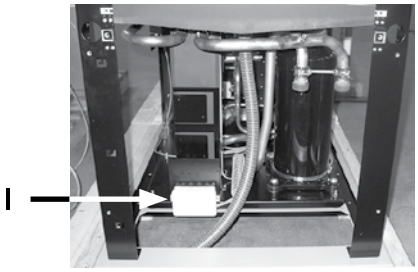
LW 90A/RX...:



I Connection box for compressor

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

LW 140A/RX:



1 Connection box for compressor

③ Connect power cable to the connection box (electric heating element on-site)...

④ Close connection box...

⑤ Install power cable in a conduit as far as where it enters the building and from there on to the fuse box...

⑥ Connect power cable to power supply.

! ATTENTION

Ensure clockwise rotary field of the load power supply (compressor).

– An incorrect rotary field of the compressor during operation can cause serious, irreparable damage to the compressor.

! ATTENTION

Make sure to equip the power supply of the heat pump with a 3-pole automatic cut-out with at least 3mm contact gap.

Note the level of the release current.

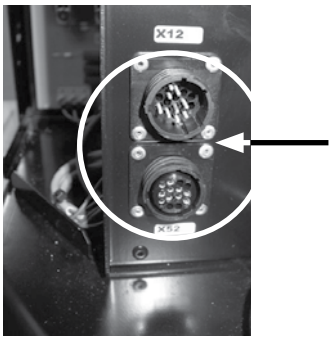
☞ Overview "Technical data / scope of delivery", "Electric" section.

HEAT PUMP SIDE CONNECTION OF THE CONTROL AND SENSOR WIRES

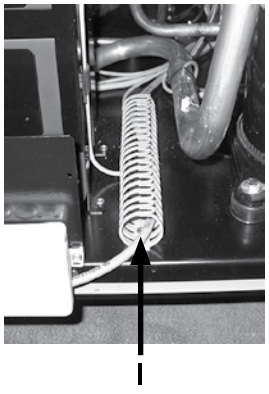
The heat pump is connected to the heating and heat pump regulator by means of the control and sensor wires. They are connected at the electric switch cabinet on the switch cabinet side (= operator side) of the heat pump.

DANGER!
Danger of fatal injury due to electric shock!
Unit must be disconnected from the power supply.

① Screw control and sensor wires to the two connectors on the side of the electric switch cabinet...



② Guide control and sensor wires inside the unit through the provided cable duct to the water connection side...



1 Cable duct for control and sensor wires (only LW 140A/RX)

③ Guide control and sensor wires out of the unit...

© Alpha-InnoTec GmbH

NOTICE
In order to enable unhinging of the electric switch cabinet in the event that customer service is necessary, the control and sensor wires in the heat pump must have an excess length of about 15 cm.

④ Install control and sensor wires in a conduit as far as where they enter the building and from there on to the heating and heat pump regulator...

⑤ Connect control and sensor wires to the heating and heat pump regulator according to the terminal diagram and the circuit diagrams for the respective model...

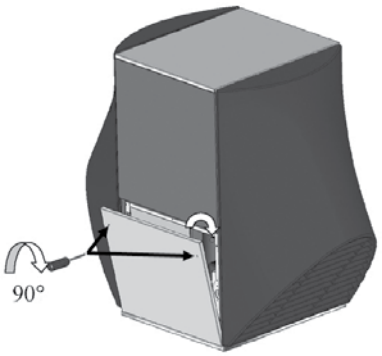
”Terminal diagrams” and “Circuit diagrams” for the respective model.

Operating manual of the heating and heat pump regulator.

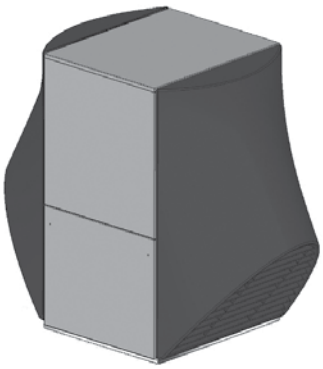
⑥ Seal empty pipes on unit side...

⑦ Screw facing panels onto the heat pump...

Place lower facing panels diagonally into the frame, close at top and fasten with quick-release screws...



The unit is now closed.



Flushing, filling and bleeding the system

WATER QUALITY OF THE FILL AND ADDITIONAL WATER IN HOT WATER HEATING SYSTEMS

ACCORDING TO VDI 2035 PART I AND II

Use of modern, energy-efficient heat pump systems is becoming increasingly widespread. Their ingenious technology enables these systems to achieve very good efficiencies. The decreasing space available for heat generators has led to the development of compact units with increasingly smaller cross-sections and high capacities. This means the complexity of the systems and the material diversity are also increasing, which plays an important role especially in their corrosion behaviour. Alpha InnoTec ensures continuous technological advances, but all these technical refinements require the system to be operated with correctly filled heating water. The heating water not only affects the efficiency of the system, but also the life of the heat generator and the heating components of a system.

The guide values of VDI 2035 Part I and Part II must therefore be complied with as minimum requirements for proper operation of the systems. Our practical experience has shown that the safest and most trouble-free running of the systems is achieved with so-called low-salt operation.

VDI 2035 Part I gives important information and recommendations regarding scaling and its prevention in heating and domestic hot water heating systems.

VDI 2035 Part II primarily deals with the requirements for reducing heating water corrosion in hot water heating systems.

PRINCIPLES OF PART I AND PART II

The occurrence of scaling and corrosion damage in hot water heating systems is low, if

- proper planning and commissioning is carried out
- the system is closed in corrosion terms
- adequately dimensioned pressurising is integrated
- the guide values for the heating water are complied with
- and regular servicing and maintenance are carried out.

A system log should be kept, in which the relevant planning data is entered (VDI 2035).

We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

DAMAGE THAT CAN OCCUR IN CASE OF NON-COMPLIANCE

- Malfunctions and the failure of components (e.g. pumps, valves)

- Internal and external leaks (e.g. from heat exchangers)

- Cross-section reduction and blockaging of components (e.g. heat exchanger, pipes, pumps)

- Material fatigue

- Gas bubbles and gas cushion formation (cavitation)

- Negative effect on heat transfer (formation of coatings, deposits) and associated noises (e.g. boiling noises, flow noises)

LIMESCALE – THE ENERGY KILLER

Filling with untreated drinking water inevitably leads to the precipitation of all calcium as scale. The consequence: limescale deposits form on the heat transfer surfaces of the heating. The efficiency falls and the energy costs rise. A rule of thumb is that 1 millimetre of limescale deposit causes an energy loss of 10%. In extreme cases it can even cause damage to the heat exchangers.

WATER SOFTENING TO VDI 2035 – PART 1

If the water is softened before the heating is filled, in accordance with the VDI 2035 guidelines, no scale can form. This effectively and permanently prevents limescale deposits and the resulting negative effects on the entire heating system.

CORROSION – AN UNDERESTIMATED PROBLEM

VDI 2035, Part II, deals with the problem of corrosion. Softening the heating water can prove to be insufficient. The pH value can significantly exceed the limit of 10. pH values higher than 11 can set in, which even damage rubber seals. The VDI 2035, Part 1 guidelines are fulfilled, however, VDI 2035, Part 2 suggests a pH value between 8.2 and maximum 10.

If aluminium materials are used, which is the case in many modern heating systems, a pH value of 8.5 must not be exceeded, because otherwise there is a threat of corrosion – and aluminium is attacked without the presence of oxygen. Therefore, apart from softening the heating fill and additional water, the heating water should also be appropriately conditioned. This is the only way to comply with the VDI 2035 requirements and the recommendations and installation instructions of the heat pump manufacturer.

Part 2 of VDI 2035 also points out the reduction in total salt content (conductivity). The risk of corrosion is far lower if deionised water is used than is the case if the system is operated with salty, i.e. softened water.

Even if the water has been softened beforehand, it contains dissolved, corrosion-promoting salts, which act as electrolytes due to the use of different materials in the heating system and therefore accelerate corrosion processes. This can ultimately result in pitting.

Contamination and deposits in the heating circuit can cause malfunctions

RINSE, FILL AND BLEED THE HEATING CIRCUIT AND HOT WATER BUFFER TANK

To bleed the hot water tank, the heating circuit and hot water circuit must be rinsed simultaneously.

ON THE SAFE SIDE WITH LOW-SALT OPERATION

The problems listed above do not occur at all with low-salt operation, as neither corrosive salts such as sulphates, chlorides and nitrates nor alkalising sodium hydrogen carbonate are in the heating water. The corrosive properties of deionised water are very low and in addition, fur cannot form in the boiler. This is the ideal approach for closed heating circuits, in particular, because low oxygen input into the heating circuit can also be tolerated.

In general, when the system is filled with deionised water, the pH value sets itself within the ideal range due to "self-alkalinisation". If necessary, a pH value of 8.2 can be very easily alkalised by adding chemicals. In this way, optimum protection of the entire heating system is achieved.

MONITORING

Analytical recording and monitoring of the relevant water values and the added active conditioning substances is of decisive importance. Therefore, they should be monitored regularly using appropriate water test equipment.

① Fill and bleed the heating circuit...

② In addition, open the bleeding valve on the condenser of the heat pump. Bleed condenser.

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Insulating the hydraulic connections

Insulate the vibration decouplers and the pipes of the heating circuit against vapour diffusion.

NOTICE
Insulate in accordance with applicable local standards and directives.

ATTENTION
Install the outside pipes of the heating circuit beneath the frost line.

Proceed as follows:

① Check seals of all hydraulic connections. Conduct pressure test...

② Insulate all connections and lines of the heat circuit and the heat source.

Commissioning

DANGER!
Prior to commissioning the unit, the air flow baffles must be mounted and the facing panels closed.

NOTICE
Commissioning must occur while the heat pump is heating.

Proceed as follows:

① Conduct a thorough installation inspection and go through the items on the general checklist...

☞ "General checklist".

The installation inspection will prevent damage to the heat pump system that could be caused by incorrect installation work.

Make sure of the following...

- **Clockwise rotary field** of the load power supply (compressor).
- **Installation and assembly** of the heat pump according to the information in this operating manual.
- All electric installation work must be properly completed.
- A **3-pole automatic circuit-breaker** must be installed for the compressor. It must have a contact gap of at least 3 mm.
- The heating circuit must be flushed, filled and thoroughly bled.
- All valves and shut-off devices of the heating circuit must be open.
- All pipe systems and components of the system must be sealed.

② Carefully fill out and sign the completion report for heat pump systems...

☞ "Completion report for heat pump systems".

③ In Germany:
Send completion report for heat pump systems and general checklist to the manufacturer's factory customer service department.

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Outside of Germany:
Send completion report for heat pump systems and general checklist to the manufacturer's local partner.

☞ Overview "Customer service".

④ The heat pump system will be commissioned by customer service personnel authorised by the manufacturer. There is a fee for commissioning!

Dismantling

DANGER!
Danger of fatal injury due to electric shock!
Electrical connections may be installed only by qualified electricians.
Before opening the unit, disconnect the system from the power supply and secure it from being switched back on!

DANGER!
Danger of fatal injury due to electric shock!
Only qualified electrical technicians are allowed to disconnect the unit from the power supply and de-install all electrical connections.

DANGER!
Only qualified heating or cooling system technicians are allowed to remove the unit from the system.

DANGER!
Only qualified cooling system technicians are allowed to dismantle the unit and its components.

! ATTENTION
Recycle or provide for proper disposal of unit components, refrigerants and oil in accordance with the applicable regulations, standards and directives.

REMOVAL OF THE BUFFER BATTERY

! ATTENTION
Before scrapping the heating and heat pump regulator, remove the buffer battery on the processor board. The battery can be pushed out using a screwdriver. Dispose of battery and electronic components in keeping with environmental considerations.

© Alpha-InnoTec GmbH

Technical data / scope of delivery

Heat pump type	Brine/water ı Air/water ı Water/water			• applicable ı — not applicable
Installation location	Indoors ı Outdoors			• applicable ı — not applicable
Conformity				CE
Performance data	Heating capacity/COP heat optimised at			
	A7/W35	Standard point acc. to EN14511	1 compressor	kW ı ...
	A7/W45	Standard point acc. to EN14511	1 compressor	kW ı ...
	A2/W35	Operating point acc. to EN14511	1 compressor	kW ı ...
	A10/W35	Operating point acc. to EN14511	1 compressor	kW ı ...
	A-7/W35	Operating point acc. to EN14511	1 compressor	kW ı ...
Performance data	Cooling capacity/EER cool optimised at			
	A27/W18	Operating point acc. to EN14511	1 compressor	kW ı ...
	A27/W7	Operating point acc. to EN14511	1 compressor	kW ı ...
	A35/W18	Operating point acc. to EN14511	1 compressor	kW ı ...
	A35/W7	Operating point acc. to EN14511	1 compressor	kW ı ...
Heating limits of application	Heating circuit (water)			°C
	Heat source (air)			°C
	Additional operating points			°C
Cooling limits of application	Cooling circuit (water)			°C
	Heat sink (air)			°C
Sound	Sound pressure level outside (measured at distance of 1m around air connections)			dB(A)
	Sound pressure level outside (measured at distance of 1m around air connections)			dB(A)
Heat transfer medium air	Air volume flow at maximum external compression			m³/h
	Maximum external pressure			Pa
Heat transfer medium water	Volume flow: minimum flow rate ı nominal flow rate A7/W35 EN14511 ı maximum flow rate			l/h
	Pressure losses heating/cooling Δp ı volume flow			bar ı l/h
	Pressure losses hot water circuit/swimming pool circuit Δp ı volume flow			bar ı l/h
General unit data	Dimensions (see dimensional drawing for the specified unit size)			unit size
	Total weight			kg
	Connections	Heating circuit / cooling circuit		...
		Hot water circuit / swimming pool circuit		...
	Refrigerant	Refrigerant type ı Quantity		... ı kg
	Free cross section, air channels			mm
	Cross section, condensate water / length from unit			mm ı m
Elektric	Voltage code ı all-pole circuit breaker heat pump **)			... ı A
	Voltage code ı circuit breaker control voltage **)			... ı A
	Voltage code ı circuit breaker electric heating element **)			ı A
Heat pump	Effect. power consumption in standard point A7/W35 acc. to EN14511: Power consumption ı current consumption ı cosφ			kW ı A ı ...
	Maximum device current within the limits of application			A
	Starting current: direct ı with soft starter			A ı A
	Protection type			IP
	Output electric heating element 3 ı 2 ı 1 phase			kW ı kW ı kW
Safety equipment	Safety component heating circuit ı Safety component heat source			Incl. in scope of delivery: • yes — no
Heating and heat pump regulator				Included in scope of delivery: • yes — no
Control and sensor wire				Included in scope of delivery: • yes — no
Power cable to unit				Included in scope of delivery: • yes — no
Electronic soft starter				integrated: • yes — no
Expansion vessels	Heating circuit: Scope of delivery ı Volume ı Initial pressure			• yes — no ı l ı bar
Overflow valve				integrated: • yes — no
Vibration decouplers	Heating circuit			Included in scope of delivery: • yes — no

UK813506c

*) depending on components tolerances and flow **) comply with local regulations n.n. = not detectable w.w. = optional
¹) hot water return flow ²) hot water forward flow

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

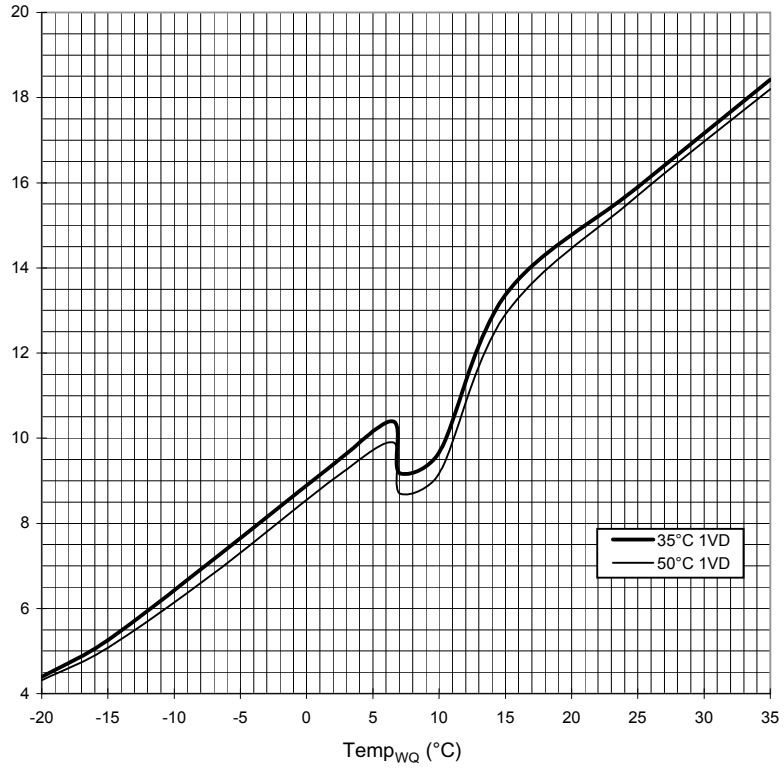
	LW 90 A/RX	LW 140 A/RX
	— ı • ı —	— ı • ı —
	— ı •	— ı •
	•	•
	9,2 ı 4,1	14,4 ı 4,2
	8,9 ı 3,3	13,9 ı 3,5
	9,4 ı 3,5	13,8 ı 3,5
	9,7 ı 4,3	14,1 ı 4,3
	7,2 ı 2,8	10,8 ı 2,9
	14,5 ı 3,7	20,3 ı 3,8
	10,8 ı 3,2	15,4 ı 3,2
	13,0 ı 2,9	18,4 ı 2,9
	9,9 ı 2,5	14,2 ı 2,5
	20[1] – 52[2]	20[1] – 52[2]
	-20 – 40	-20 – 40
	A> -7 / 60[2]	A> -7 / 60[2]
	7[2] – 20[2]	7[2] – 20[2]
	15 – 40	15 – 40
	—	—
	55	56
	4000	5100
	—	—
	1350 ı 2000 ı 2500	2000 ı 3000 ı 3750
	0,031 ı 1450	0,024 ı 2100
	— ı —	— ı —
	2	4
	260	280
	R 1"AG	R5/4"AG
	—	—
	R407C ı 6,8	R407C ı 10,2
	—	—
	30 ı 1	30 ı 1
	3~/PE/400V/50Hz ı C10	3~/PE/400V/50Hz ı C16
	1~/N/PE/230V/50Hz ı B10	1~/N/PE/230V/50Hz ı B10
	—	—
	2,25 ı 4,3 ı 0,75	3,95 ı 7,6 ı 0,75
	8,1	11,9
	51,5 ı 30	74 ı 30
	24	24
	—	—
	—	—
	—	—
	—	—
	—	—
	•	•
	—	—
	—	—
	—	—
	813505a	813506d

© Alpha-InnoTec GmbH

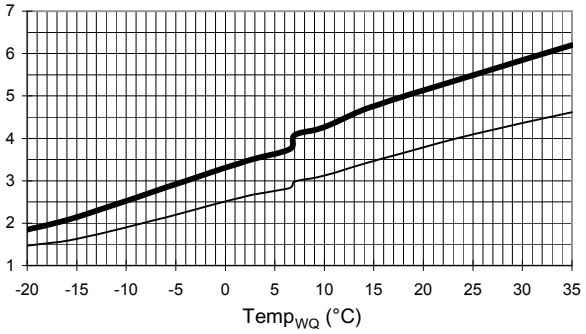
Heating LW 90A/RX

Performance curves

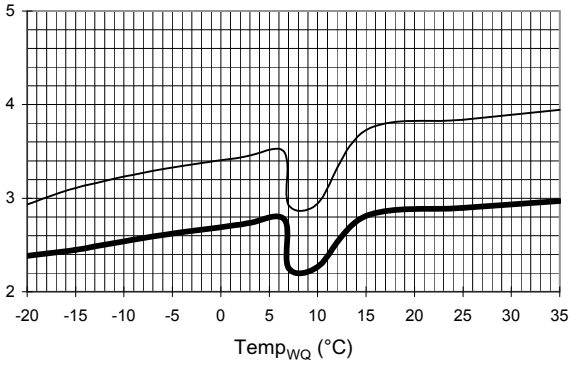
Qh (kW)



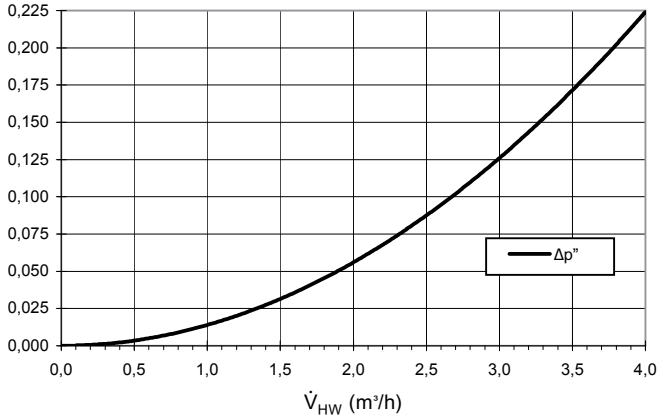
COP



Pe (kW)



Δp (bar)



823146a

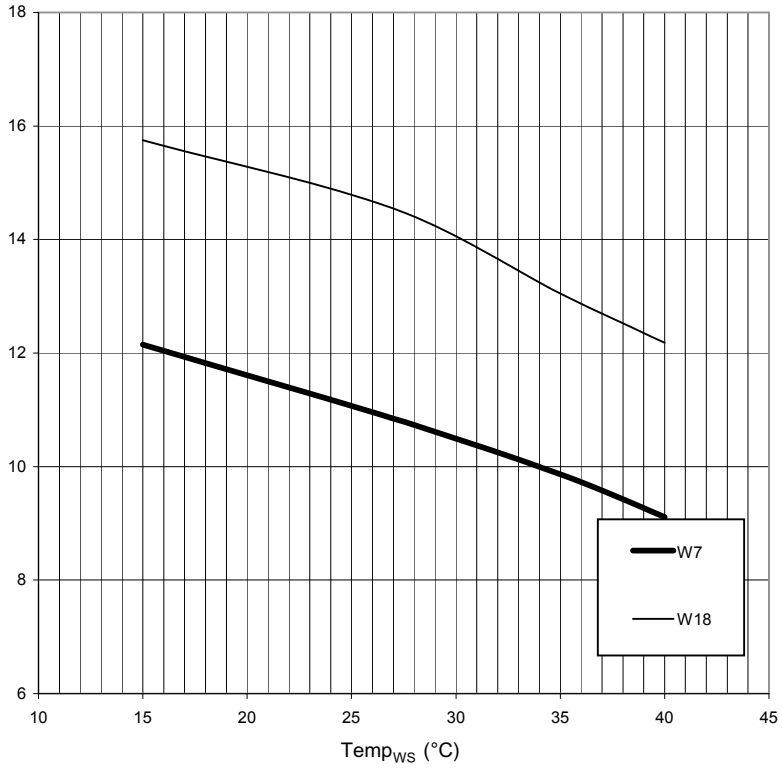
Legend:	UK823129L/170408
$\dot{V}_{HW}$	Volume flow, heating water
Temp$_{WQ}$	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp$_{HW}$	Pressure loss heat pump
VD	Compressor(s)

We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

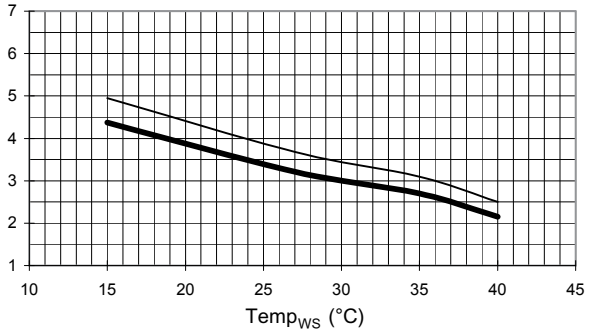
Performance curves

Cooling LW 90A/RX

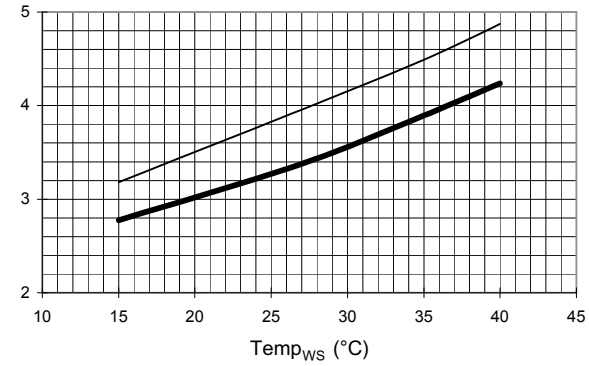
Q0 (kW)



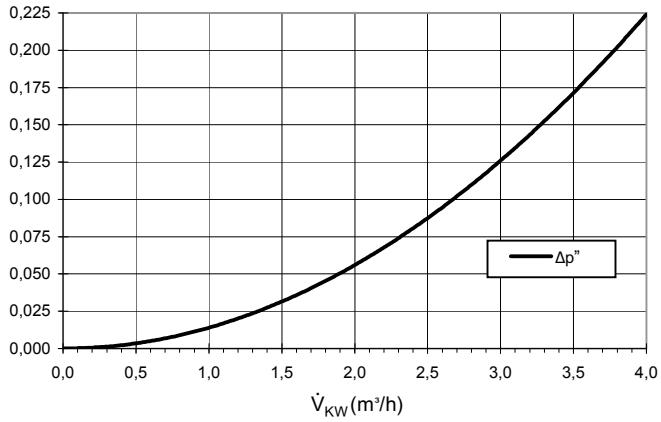
EER



Pe (kW)



Δp (bar)



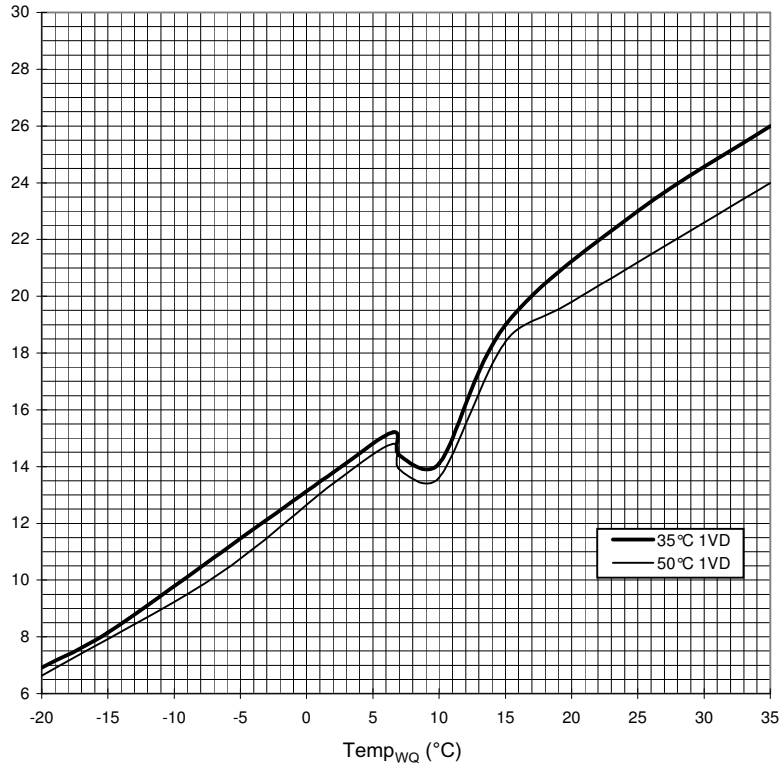
Legend:	UK823134L/190313
$\dot{V}_{KW}$	Volume flow cooling water
Temp$_{WS}$	Heat sink temperature
Q0	Cooling capacity
Pe	Power consumption
EER	Energy efficiency ratio / cooling capacity rate
Δp$_{HW}$	Pressure loss heat pump
VD	Compressor(s)

© Alpha-InnoTec GmbH

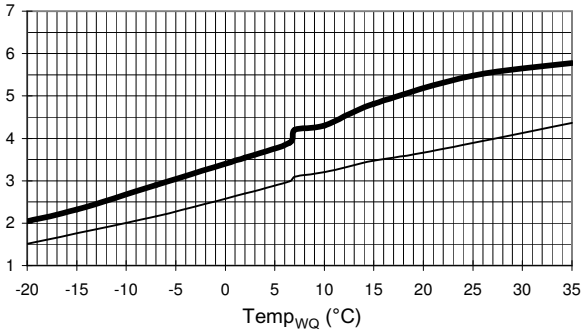
Heating LW 140A/RX

Performance curves

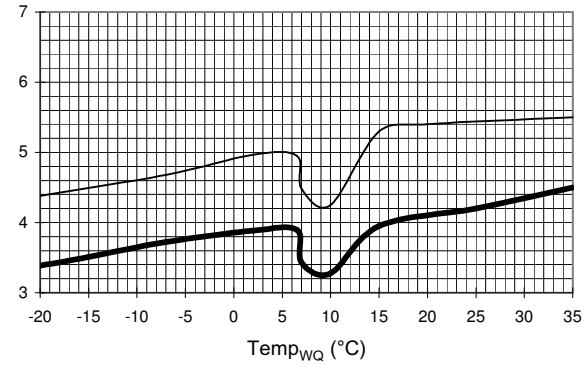
Qh (kW)



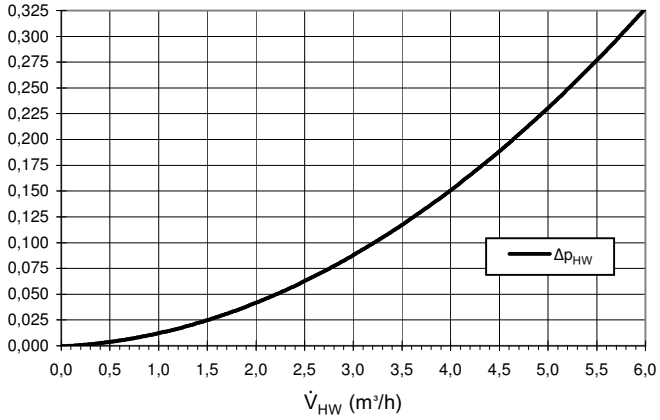
COP



Pe (kW)



Δp (bar)



823143b

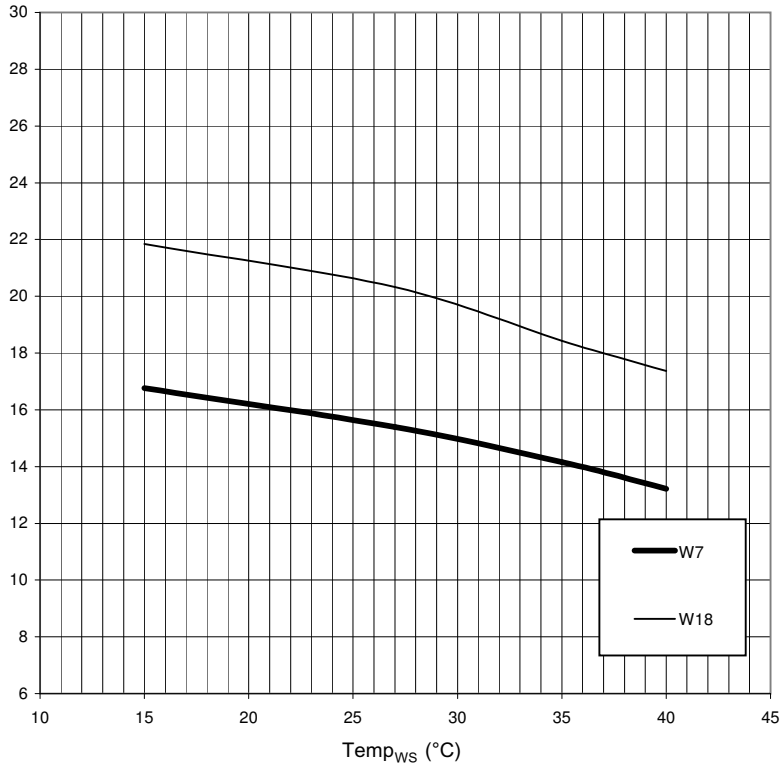
Legend:	UK823129L/170408
$\dot{V}_{HW}$	Volume flow, heating water
Temp$_{WQ}$	Temperature, heat source
Qh	Heating capacity
Pe	Power consumption
COP	Coefficient of performance / efficiency rating
Δp$_{HW}$	Pressure loss heat pump
VD	Compressor(s)

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

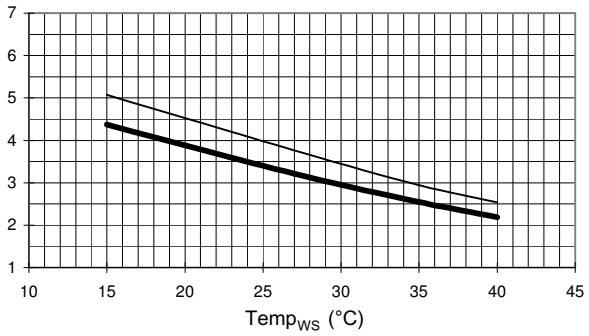
Performance curves

Cooling LW 140A/RX

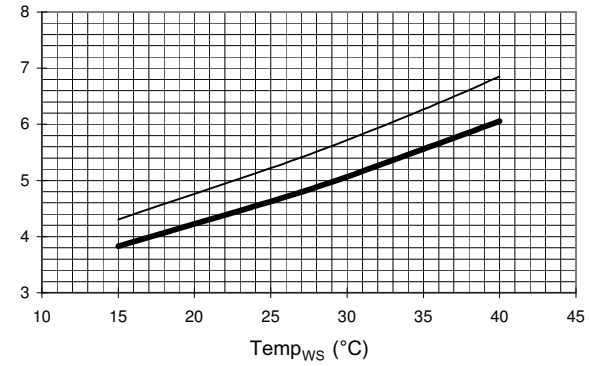
Q0 (kW)



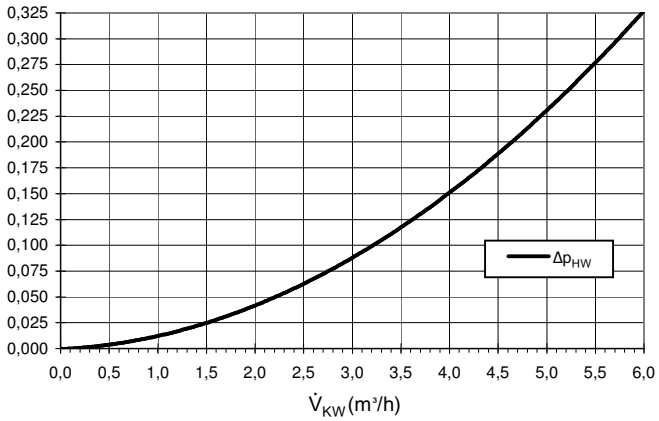
EER



Pe (kW)



Δp (bar)



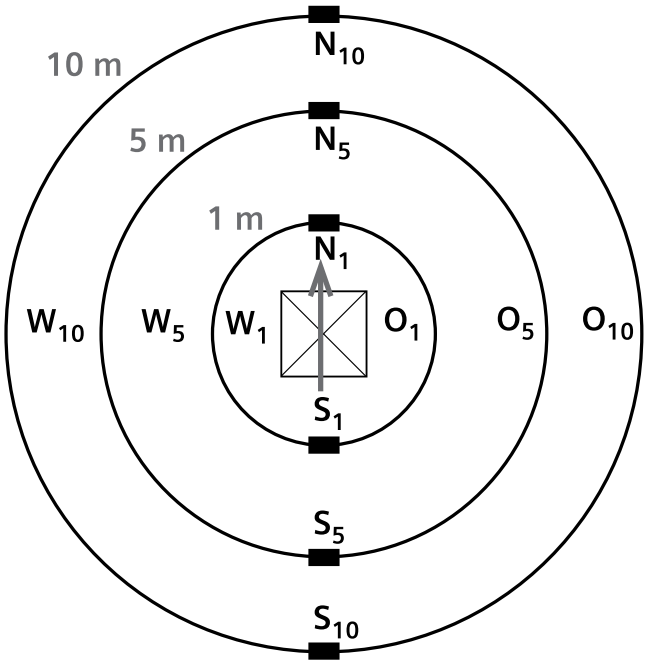
823143b

Legend:	UK823134L/190313
$\dot{V}_{KW}$	Volume flow cooling water
Temp$_{WS}$	Heat sink temperature
Q0	Cooling capacity
Pe	Power consumption
EER	Energy efficiency ratio / cooling capacity rate
Δp$_{HW}$	Pressure loss heat pump
VD	Compressor(s)

© Alpha-InnoTec GmbH

Sound pressure level

(in free field)

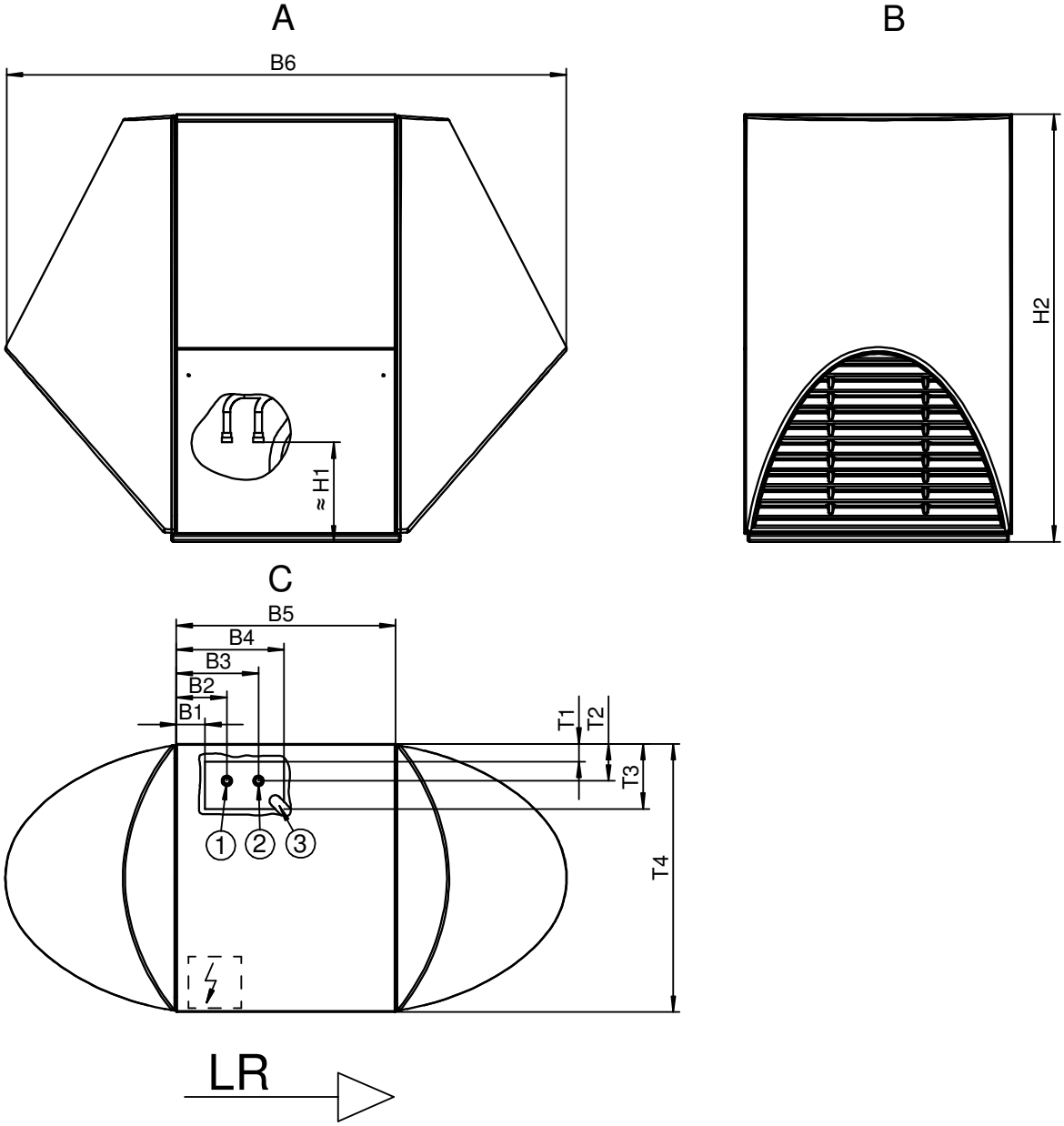


	N_1 dB (A)	O_1 dB (A)	S_1 dB (A)	W_1 dB (A)	N_1 dB (A)	O_1 dB (A)	S_1 dB (A)	W_1 dB (A)	N_{11} dB (A)	O_{11} dB (A)	S_{11} dB (A)	W_{11} dB (A)
LW 90A/RX	57	54	55	54	43	40	41	40	37	34	35	34
LW 140A/RX	58	54	57	57	44	40	43	43	38	34	37	37

DE813076_Rev

We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

Dimensional drawings



Legend: UK819294c_Rev
All dimensions in mm.

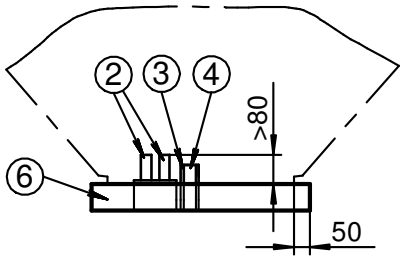
A	Front view
B	Side view
C	Top view
1	Heating water outflow (forward flow)
2	Heating water inflow (return flow)
3	Condensate hose diameter 36
LR	Air direction

	B_1	B_1	B_1	B_1	B_1	B_1	T_1	T_1	T_1	T_1	H_1	H_1	I	2
LW 90A/RX…	91	160	260	341	694	1774	56	117	206	848	315	1353	R 1“	R 1“
LW140A/RX	79	139	239	329	715	1931	132	207	282	1050	430	1780	R 1¼“	R 1¼“

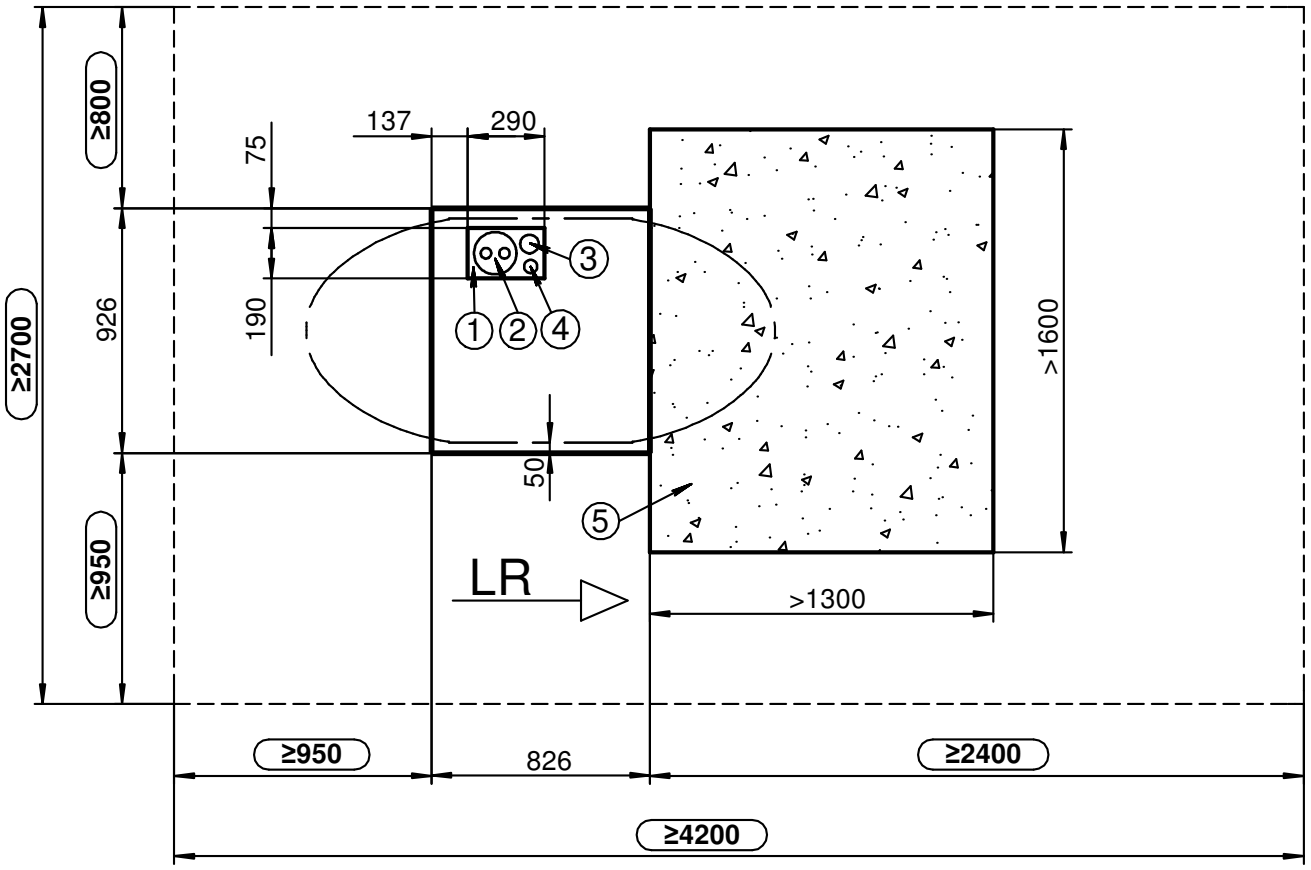
© Alpha-InnoTec GmbH

Installation plan LW 90A/RX…

A



C

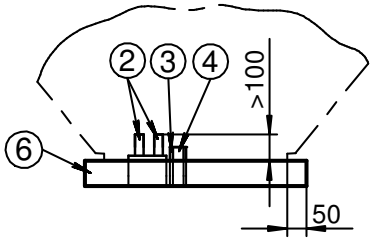


Legend: UK819280d
All dimensions in mm.

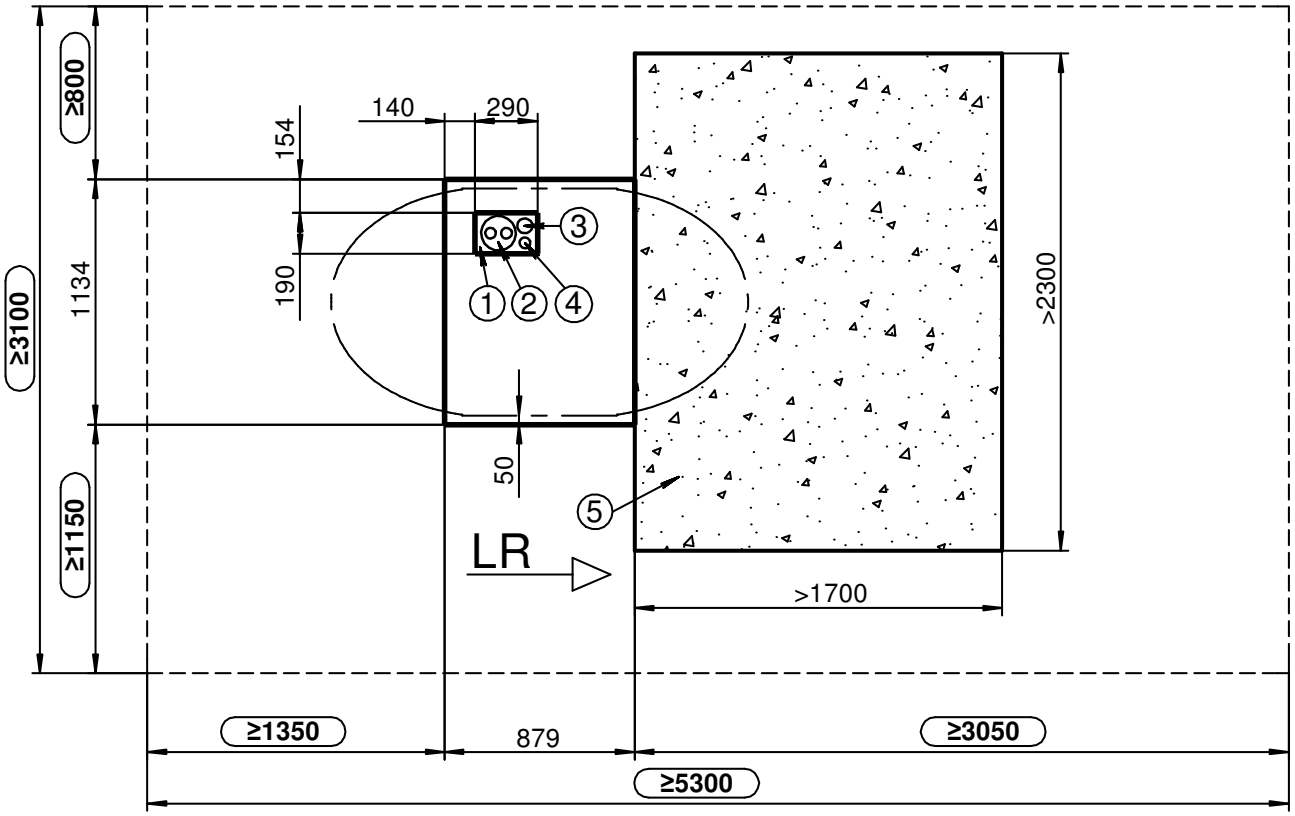
A	Front view
C	Top view
≥ …	Minimum clearances
1	Recess in base
2	Local heat pipe for heating water forward/return flow
3	Empty pipe for electric cables, minimum diameter 70mm
4	Condensate discharge, minimum diameter 50mm
5	water-permeable surface (gravel, …) in the air outlet area
6	Base
LR	Air direction

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

A



C



Legend: UK819293d
All dimensions in mm.

A	Front view
C	Top view
≥ …	Minimum clearances
1	Recess in base
2	Local heat pipe for heating water forward/return flow
3	Empty pipe for electric cables, minimum diameter 70mm
4	Condensate discharge, minimum diameter 50mm
5	water-permeable surface (gravel, …) in the air outlet area
6	Base
LR	Air direction

© Alpha-InnoTec GmbH

Hydraulic connection

1) Heat pump
2) Underfloor heating / radiators
3) vibration isolation
4) Sylomer strip machine underlay
5) closure and drainage
6) expansion vessel packing list
7) safety valve
8) closure
9) heating circulation pump
10) check valve
11) individual room regulation
12) overflow valve
13) steamtight insulation
14) domestic hot water circulation pump
15) mixer circuit three-way mixer (discharge)
16) expansion vessel supplied by customer
17) temperature difference regulator
18) heating element (heating)
19) mixer circuit four-way mixer (charge)
20) heating element (domestic hot water)
21) mixer circuit circulation pump
22) swimming pool circulating pump
23) feed circulating pump (reconnect the integrated circulating pump in the heat pump)
24) manometer
25) heating and domestic hot water circulation pump
26) changeover valve domestic hot water (B = normally open)
27) heating element (heating and domestic hot water)
28) brine circulation pump
29) dirt-trap 1 mm mesh
30) spill-tray for brine mix
31) wall breakthrough
32) feed pipe
33) brine distributor
34) ground collector
35) ground probe
36) groundwater spring pump
37) thermostat 0°C - 16°C
38) flow switch
39) suction well
40) inverted well
41) rinse fitting heating circuit
42) circulation pump
43) brine / water heat exchanger (cooling function)
44) three-way mixer valve (cooling function)
45) cap valve
46) filler and drainage valve
47) changeover valve swimming bath preparation (B = normally open)
48) domestic hot water charging pump
49) direction of groundwater flow
50) buffer storage
51) separator storage

Hydraulic legend

52) gas- or oil-boiler
53) wood boiler
54) domestic hot water storage
55) brine pressure monitor
56) swimming pool heat exchanger
57) geothermal heat exchanger
58) indoor ventilation
59) plate heat exchanger
60) changeover valve cooling operation (B = normally open)
61) cool storage
62) heat meter (optional)
63) changeover valve solar circuit (B = normally open)
64) ----------
65) compact distributor

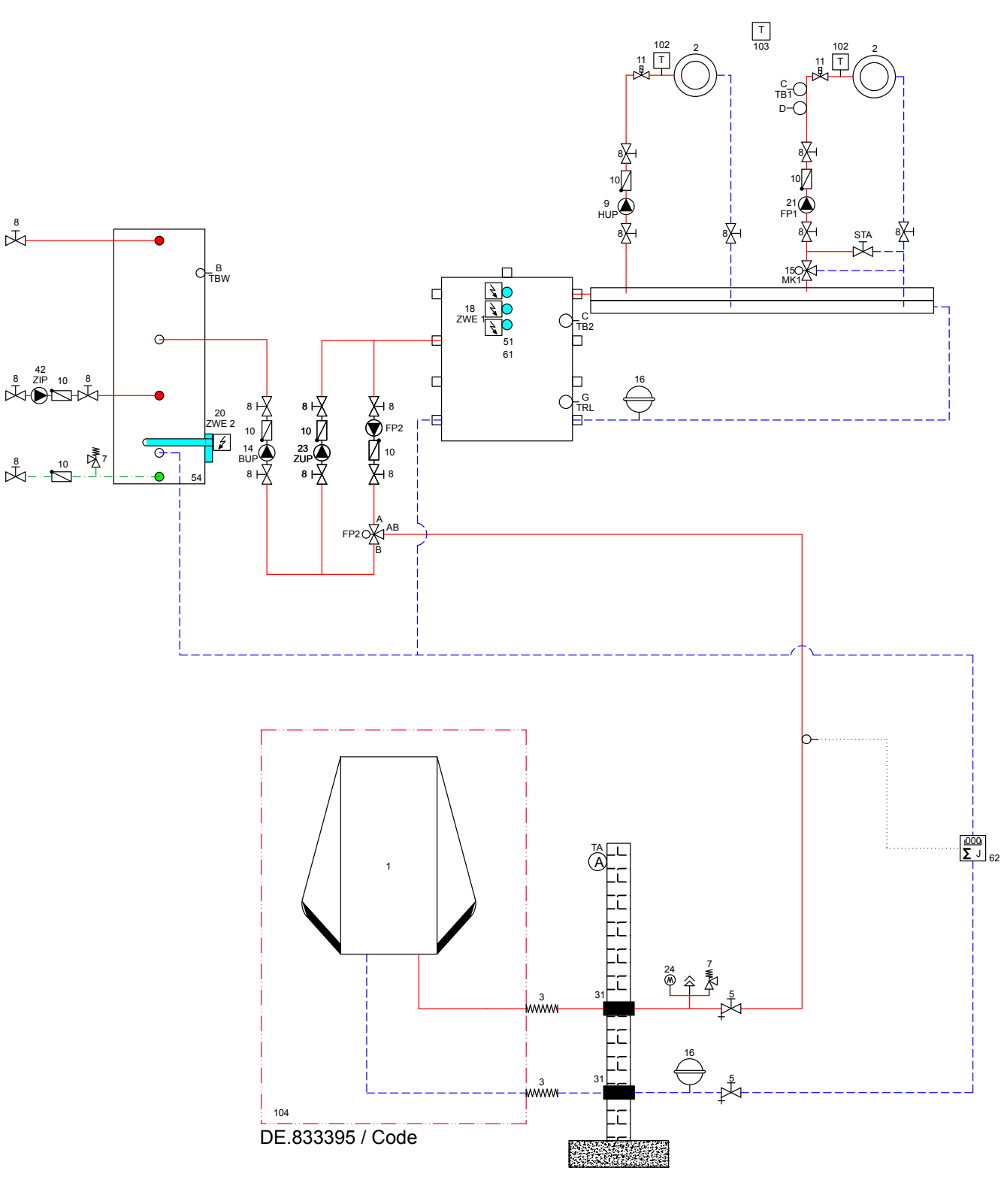
101) controls supplied by customer
102) dew-point monitor (optional)
103) room thermostat for reference space in packing list
104) supply heat pump
105) cooling circuit module box removable for installation
106) specific glycol mixture
107) scald protection / thermostatic mixer valve
108) solar pump assembly
109) overflow valve must be closed
110) packing list hydraulic tower
111) mounting for additional heating element

TA / A	external sensor
TBW / B	domestic hot water sensor
TB1 - 3 / C	feedwater sensor mixer circuits 1 - 3
D	floor temperature limiter
TSS / E	sensor, temperature difference control (low temperature)
TSK / E	sensor, temperature difference control (high temperature)
TEE / F	sensor external energy source
TRL / G	sensor external return
STA	line pressure regulator valve

Important notice. These hydraulic diagrams are schematic representations and are for assistance only. They do not relieve of the obligation to carry out appropriate planning! They do not include all necessary shut-off valves, ventilator fittings or safety devices. These must be incorporated in accordance with the standards and regulations applicable to the respective installation.

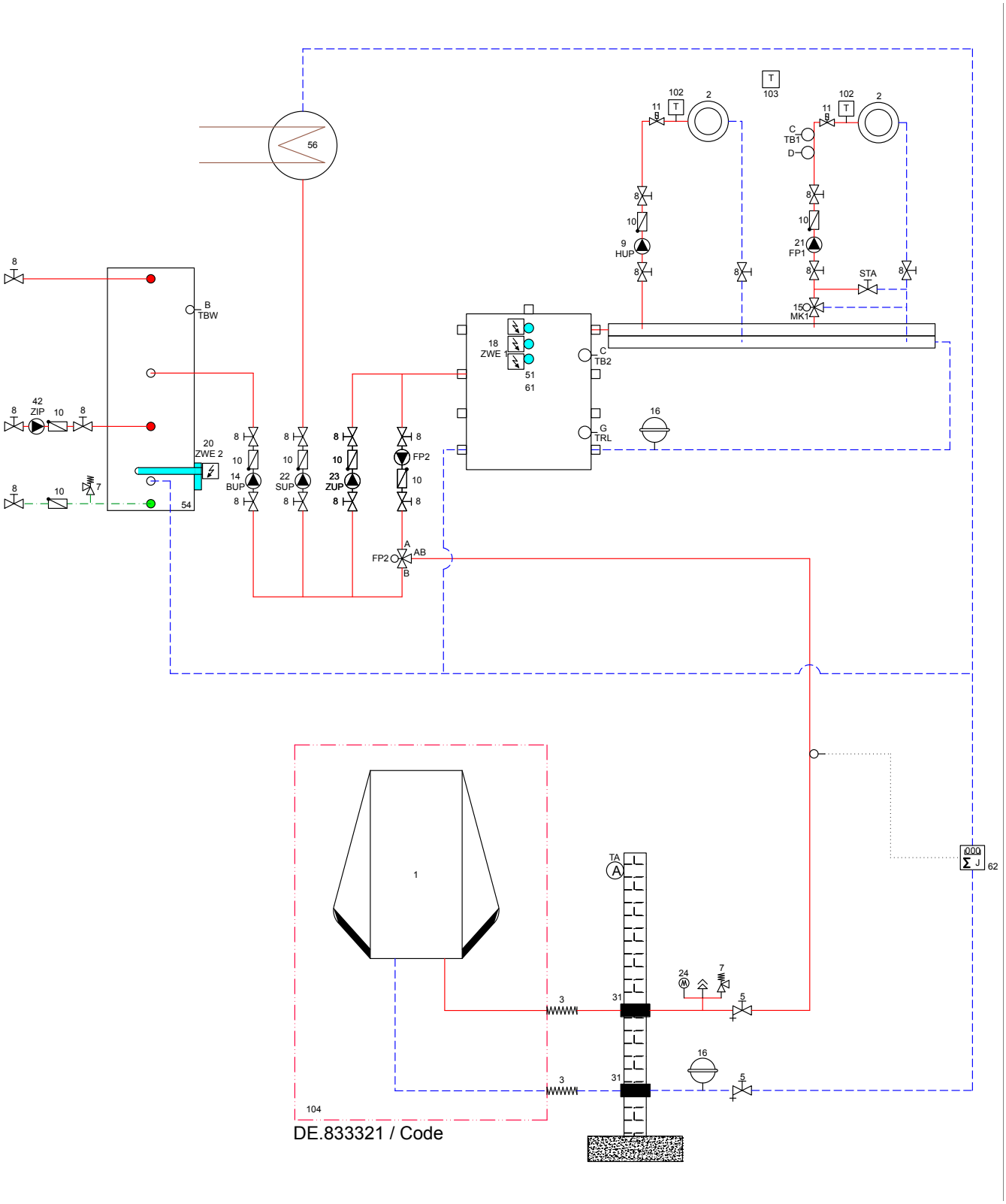
UK090921

We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH



DE.833395 / Code

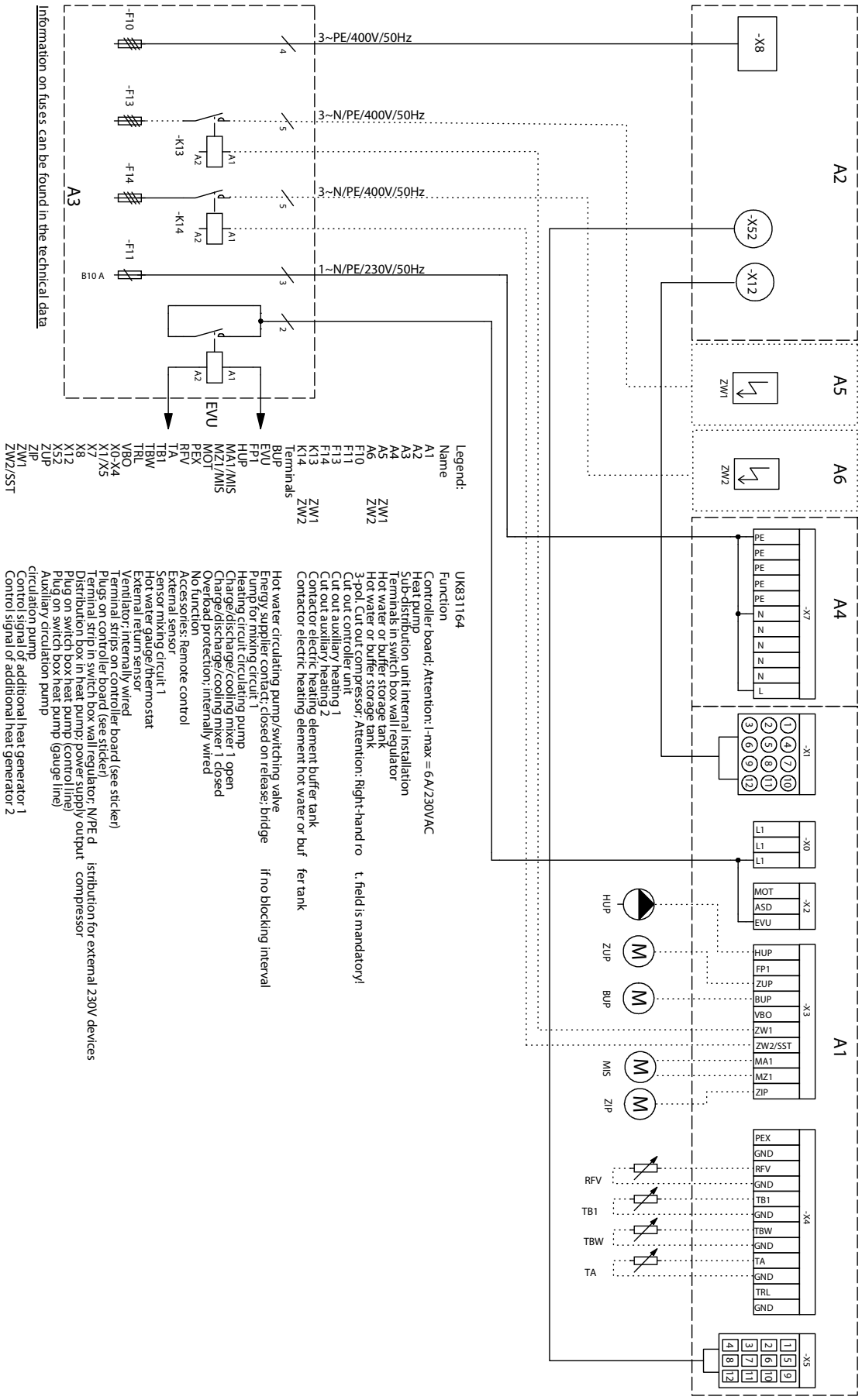
© Alpha-InnoTec GmbH



DE.833321 / Code

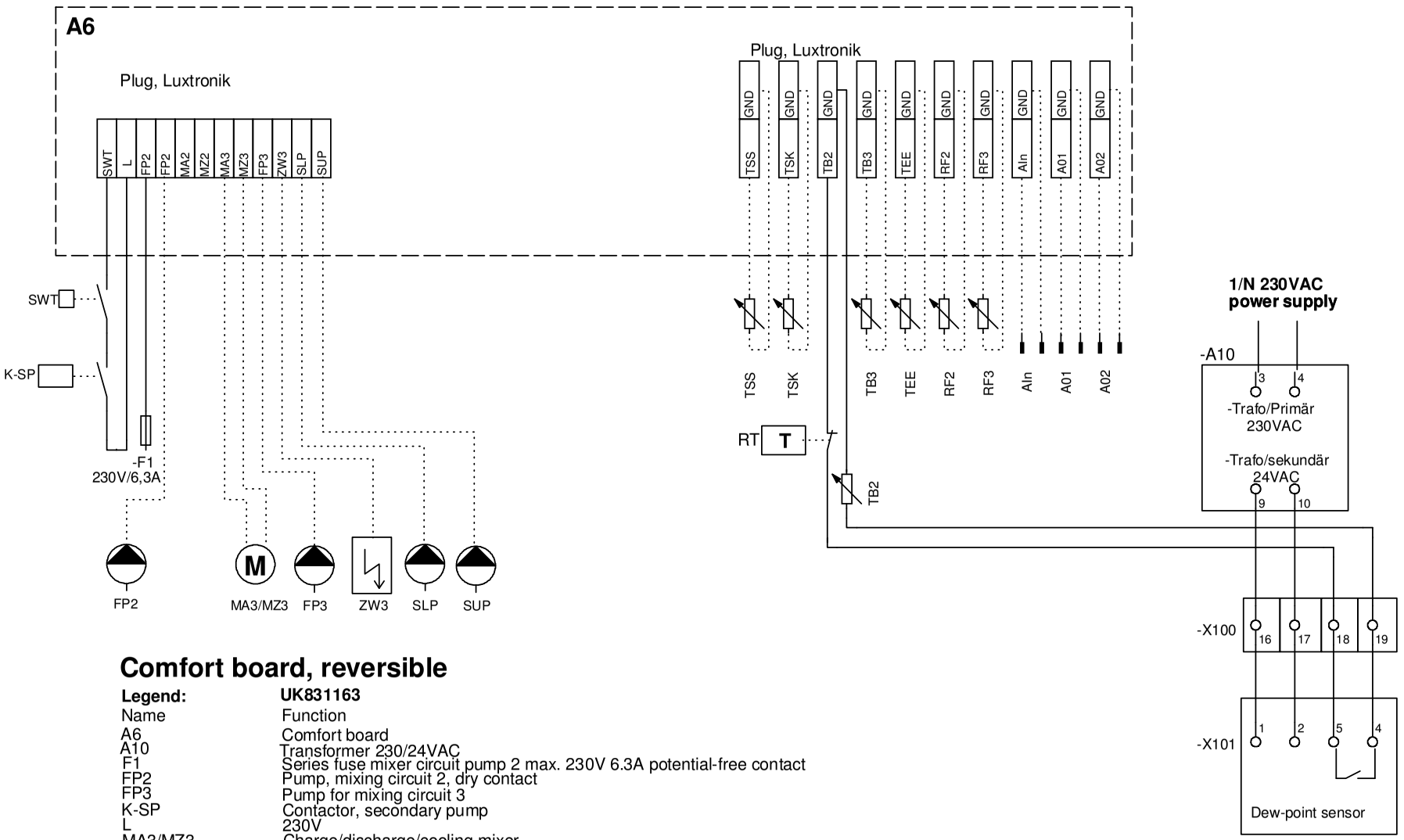
We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

© Alpha-InnoTec GmbH



We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Terminal diagram



Comfort board, reversible

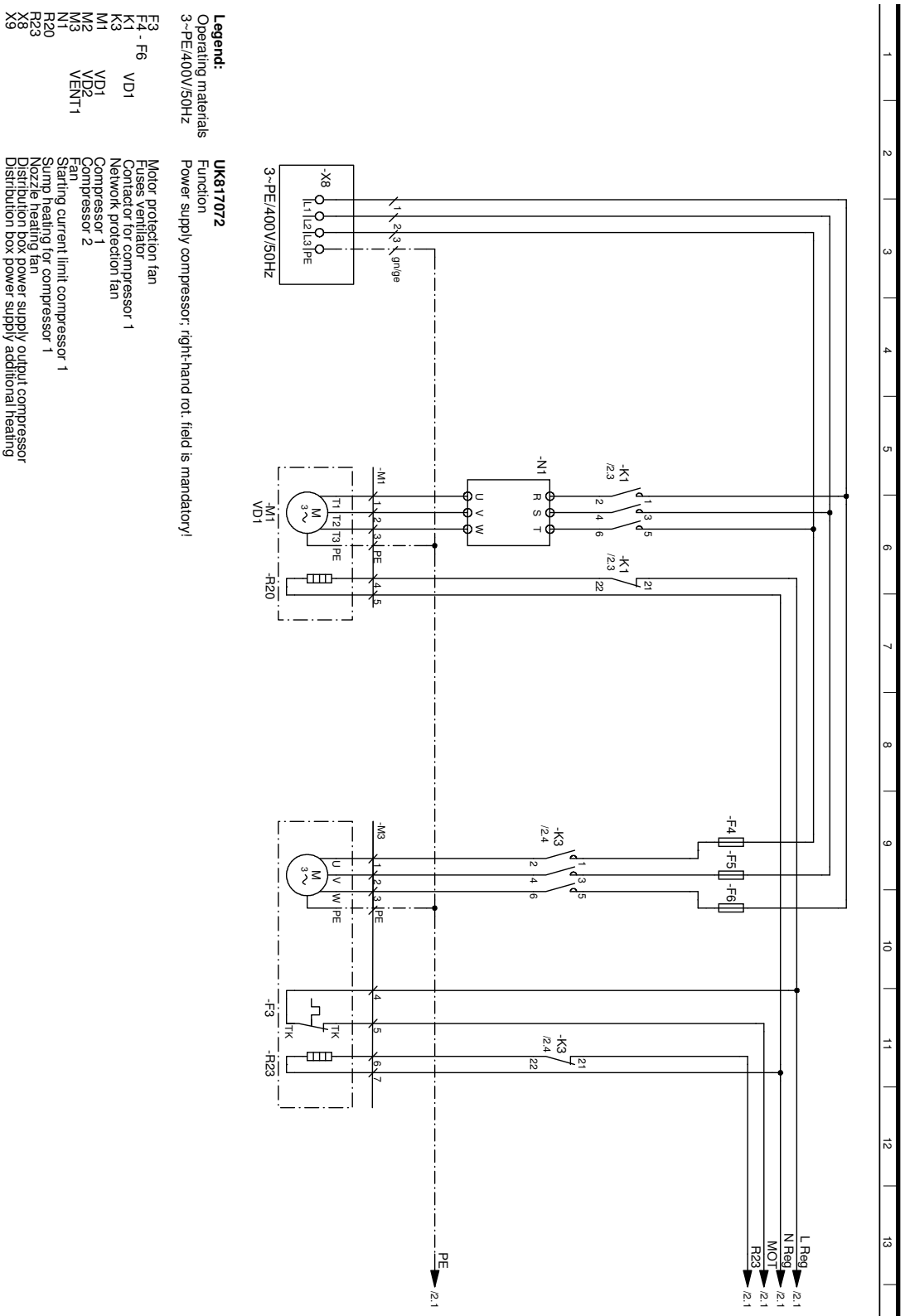
Legend:	**UK831163**
Name	Function
A6	Comfort board
A10	Transformer 230/24VAC
F1	Series fuse mixer circuit pump 2 max. 230V 6.3A potential-free contact
FP2	Pump, mixing circuit 2, dry contact
FP3	Pump for mixing circuit 3
K-SP	Contactor, secondary pump
L	230V
MA3/MZ3	Charge/discharge/cooling mixer
RT	Room thermostat
SLP	Solar charge pump
SUP	Swimming pool, circulating pump
SWT	Swimming pool, thermostat
X100	Accessory connections dew-point detector
X101	Connections, dew-point detector
ZW3	Control signal, additional heat generator 3
AIn	Analogue input 0-10V / 0-20 mA
A01	Analogue output 1 0-10V
A02	Analogue output 2 0-10V
RF2	Room station, mixing circuit 2
RF3	Room station, mixing circuit 3
TB2	Cooler sensor separator storage
TB3	Sensor mixing circuit 3
TEE	Sensor, external energy source
TSK	Error solar collector
TSS	Error solar tank

! CAUTION:
For all unit-specific connections, refer to the terminal diagram for the respective unit.

Operating manual for the respective unit

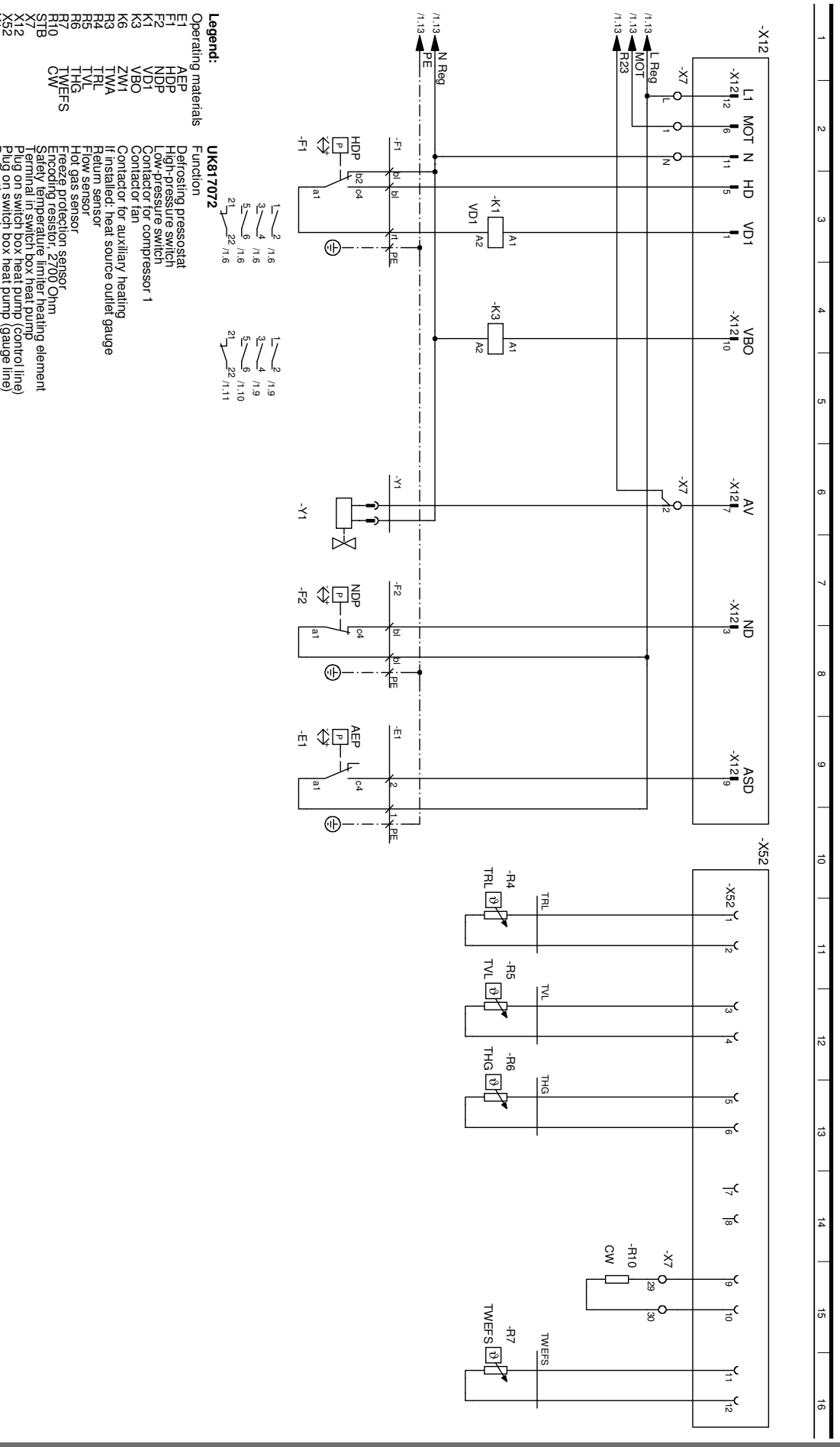
We reserve the right to modify technical specifications without prior notice.
© Alpha-InnoTec GmbH

Circuit diagram 1/2



We reserve the right to modify technical specifications without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

Circuit diagram 2/2



Legend:

Operating materials	Function
E1	AEP	Defrosting pressostat
F1	HDP	High-pressure switch
F2	NDP	Low-pressure switch
K1	VD1	Contactor for compressor 1
K3	VBO	Contactor fan
K6	ZW1	Contactor for auxiliary heating
R3	TWA	If installed: heat source outlet gauge
R4	TRL	Return sensor
R5	TVL	Flow sensor
R6	THG	Hot gas sensor
R7	TWEFS	Freeze protection sensor
R10	CW	Encoding resistor, 2700 Ohm
STB		Safety temperature limiter heating element
X7		Terminal in switch box heat pump
X12		Plug on switch box heat pump (control line)
X52		Plug on switch box heat pump (gauge line)
Y1		Defrosting valve

© Alpha-InnoTec GmbH

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

EC declaration of conformity

The undersigned
confirms that the following designated device(s) as designed and marketed by us fulfill the standardized EC directives, the EC safety standards and the product-specific EC standards.
In the event of modification of the device(s) without our approval, this declaration shall become invalid.

DESIGNATION OF THE DEVICE(S)

Heat Pump

Unit model	Number	Unit model	Number
LW 90 Solar	100 438		
LW 90A Solar	100 439		
LW 90A/RX	100 431		
LW 140A/RX	100 432		

EC DIRECTIVES

2006/42/EG
2006/95/EG
2004/108/EG

STANDARDIZED EN

EN 378	EN 349
EN 60529	EN 60335-1/-2-40
EN ISO 12100-1/2	EN 55014-1/-2
EN ISO 13857	EN 61000-3-2/-3-3

NATIONAL STANDARDS/DIRECTIVES

DE	AT	CH
BGR 500 Teil 2 DIN 8901		NEV (SR 743.26)

Company:

alpha innoTec
Industriestrasse 3, D – 95359 Kasendorf

Place, date: Kasendorf, 20.10.2009

Signature:

Jesper Stannow
Technical Director

UK818144b

© Alpha-InnoTec GmbH

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

General checklist

FOR PREPARATION OF THE COMPLETION REPORT FOR HEAT PUMP SYSTEMS

The general checklist is intended as an aid for the installation and assembly personnel. It makes no claim to be exhaustive. Nevertheless, all items must be checked carefully for compliance.

Heat source air

- Channels closed and sealed ❑ Yes
- Weather protection screen installed ❑ Yes
- Rotary field of fan ❑ O.K.

Heat source brine / heat source water

- Heat source volume flow [1] ❑ O.K.
- Motor protection setting __ A
- Rotary field of heat source circulating pump ❑ O.K.
- Heat source filled, air-free and sealed ❑ Yes

Brine

- Frost protection down to __ °C
- Type of anti-freeze agent (please enter)

Water

- Water quality OK [2] ❑ Yes
- Well units ❑ Yes
- Other heat source ❑ Yes

Heat pump

- Installation of condensate hose ❑ O.K.
- Decoupled from structure ❑ Yes
- Vibration decouplers of heating circuit and heat source connections mounted ❑ Yes

Solar heat system ❑ No ❑ Yes

1) checked with specifications
2) Report of water analysis must be submitted.

Heating

- Volume flow [1] ❑ O.K.
- Heating system designed for maximum __ °C
- Heating system filled, air-free and sealed ❑ Yes
- Low temperature heating ❑ Yes
- High temperature heating ❑ Yes
- All heating circuits can be opened ❑ Yes
- Forward flow tank ❑ Yes
- Return flow tank ❑ Yes
- Separating tank ❑ Yes
- Contents __ l
- Additional heating __ kW

Domestic hot water

- with heat pump ❑ Yes
- Request with thermostat ❑ Yes
- Request with sensor ❑ Yes
- Volume flow [1] ❑ O.K.
- Heat exchanger surface __ m²
- Connections sealed ❑ Yes

Electric

- Rotary field, power network ❑ clockwise
- Protective measures checked ❑ Yes
- Rotary field of compressor ❑ O.K.
- Return flow sensor mounted ❑ internal ❑ external
- Outdoor sensor mounted ❑ No ❑ Yes

- The heating system is filled and pressure tested; the circulating pumps function properly. ❑ No ❑ Yes
- The heat source system is completed, inspected and OK. ❑ No ❑ Yes
- The heating circuit, heat source system and circulating pumps have been bled. ❑ No ❑ Yes
- All electrical components are connected in accordance with the terminal diagram and applicable local regulations. ❑ No ❑ Yes
- All volume flows and water flow rates have been checked and are OK. ❑ No ❑ Yes

Checked on: .....

by: ..... Signature: .....

In Germany the following applies: send this general checklist **along with the completed report for heat pump systems** to the factory customer service.

Outside of Germany the following applies: send this general checklist **along with the completed report for heat pump systems** to the manufacturer's local service partner.

Sending the general checklist and the completion report also serves as a request for a technician authorized by the manufacturer to commission your heat pump.

FAZ WP Formblatt UK820522g

© Alpha-InnoTec GmbH

We reserve the right to modify technical specifications without prior notice.
83051400aUK © Alpha-InnoTec GmbH

Completion report for heat pump systems

in DE: Alpha-InnoTec customer service department 01803 003550 (0,09 €/Min. aus dt. Festnetz, Mobilfunkpreise können abweichen)
in AT: Alpha-InnoTec customer service department 0820 500644 (0,15 €/Min. aus dem Festnetz und Mobilfunk)
in CH: Alpha-InnoTec customer service department 062 748 20 01
In all other countries:
to the manufacturer's local partner: .....

COMPLETION REPORT AND REQUEST FOR FACTORY COMMISSIONING

During factory commissioning, the system will be inspected to ensure that it is functioning properly. This ensures that all factory specifications have been checked and that the system can operate reliably over an extended period. The factory commissioning involves costs and is mandatory for extension of the warranty services.

❑ INITIAL COMMISSIONING ❑ REPEAT COMMISSIONING

Heat pump type / serial number

Regulator type

CONTRACTOR

❑ electric ❑ heating
❑ other company

Company

Contact person

Street address

Postcode Head office

Phone

END CUSTOMER / OPERATOR

Last name First name

Street address

Postcode City

Phone

Preferred date: *) Date Time

Alternate date: *) Date Time

*) The contractor must submit the completion report **along with the completely reviewed general checklist 14 business days** prior to the desired date of commission. If there is a conflict with the date, you will be contacted by phone.

I hereby confirm that all preliminary work required for commissioning has been carried out and completed.
The system is ready for operation.

Requested commissioning

IBN (Item-No. 160 001)	❑	IBN P5+ (Item-No. 160 003)	❑
IBN 5+(Item-No. 160 002)	❑	IBN VP5+ (Item-No. 160 004)	❑
IBN WP + LG (Item-No. 160 008)	❑	IBN VP EW (Item-No. 160 005)	❑
IBN L (Item-No. 160 050)	❑		

I, the undersigned, hereby request commissioning in return for a fee.

Invoice to ❑ Contractor ❑ End customer / operator

Location Date Name (block letters)

Signature Company stamp

In the event that the system is not ready for operation and if installation work has to be performed on the system by the commissioning technician during commissioning, this will involve charges (billed separately) to the contractor. If the system is not ready for operation, the commissioning technician can request a repeat commissioning, which will involve additional costs. The contractor or an authorized representative must be present during commissioning.

It is absolutely necessary that the operator is present for the one-time, free instruction that occurs during commissioning.

A report will be prepared during commissioning.

FAZ WP Formblatt UK820522h

© Alpha-InnoTec GmbH

Customer Services

ADDRESSES IN THE EVENT OF A SERVICE CALL

For a current list and additional partners of the manufacturer, please visit www.alpha.innotec.com.

AT
Alpha-InnoTec Österreich
ECO-WP
Wärmepumpenhandelsges. m.b.H
Währingerstr. 26
1090 Wien
Tel.: +43 (0) 800 205 852
Fax: +43 (0) 800 205 854
office@alpha-innotec.at
www.alpha-innotec.at

BE/LUX
NATHAN Import/Export N.V.-S.A.
Lozenberg 4
1932 Zaventem
Tel.: +32 (0) 27 21 15 70
Fax: +32 (0) 27 25 35 53
info@nathan.be
www.nathan.be

BR
THERMACQUA
AV. República Argentina
3021 Conj. 14 Piso L
CEP 80610-260 Portao Curtiba PR
Tel.: +55 (0) 41 301 566 59
Fax: +55 (0) 41 301 566 59
otto@thermacqua.com.br
www.thermacqua.com.br

CH
Alpha-InnoTec Schweiz AG
Industriepark
6246 Altishofen
Tel.: +41 (0) 62 74820 00
Fax: +41 (0) 62 74820 01
info@alpha-innotec.ch
www.alpha-innotec.ch

Suisse romande
Alpha-InnoTec Schweiz AG
ch. de la Venoge 7
1025 St. Sulpice
Tel.: +41 (0) 21 661 31 43
Fax: +41 (0) 21 661 31 45
info@alpha-innotec.ch
www.alpha-innotec.ch

Ticino
Alpha-InnoTec Schweiz
AG
Via alla Torre 2
6850 Mendriso
Tel.: +41 (0) 91 646 08 81
Fax: +41 (0) 91 646 09 91
info@alpha-innotec.ch
www.alpha-innotec.ch

CZ / SK
Tepelná cerpadla AIT
s.r.o.
nám. Republiky 15
614 00 Brno
Tel.: +420 (0) 545 21 40 03
Fax: +420 (0) 545 24 20 90
info@alpha-innotec.cz
www.alpha-innotec.cz

DE
Alpha-InnoTec GmbH
Industriestrasse 3
95359 Kasendorf
Tel.: +49 (0) 9228 990190
Fax: +49 (0) 9228 9906199
info@alpha-innotec.com
www.alpha-innotec.com

DK
ASAP Energy
Tinggaardvej 7
6400 Sønderborg
Tel.: +45 (0) 74 4304 80
Fax: +45 (0) 74 4304 81
info@asap.dk
www.asap.dk

EE
AIT-Nord OÜ
Artelli 10 A
10621 Tallinn
Tel.: +372 (0) 658 08 70
Fax: +372 (0) 650 18 64
info@ait-nord.ee
www.ait-nord.ee

FI
Oy Callidus Ab
Hiekkakiventie 1
00710 Helsinki
Tel.: +358 9 374 751
Fax: +358 9 374 755 05
info@callidus.fi
www.callidus.fi

FR
ait-france
10 rue des Moines
67500 Haguenau
Tel.: +33 (0) 3 880 624 10
Fax: +33 (0) 3 880 624 11
info@alpha-innotec.fr
www.alpha-innotec.fr

HU
Thermo Kft.
Krisztina körút 27
1122 Budapest
Tel.: +36 (0) 135 620 46
Fax: +36 (0) 121 428 68
thermo@thermo.hu
www.alpha-innotec.hu

IE
Origen Office Naas Road
Muirfield Drive, Naas Road,
Dublin 12
Tel.: +353 (0) 141 919 19
Fax: +353 (0) 145 848 06
info@origen.ie
www.origen.ie

IT
Forti Consult SAS
Zona Artigianale Nord, 8
39040 ORA - BZ
Tel.: +39 04 71 811 460
Fax: +39 04 71 811 461
forticonsult@sistemibz.it
www.alpha-innotec.it

We reserve the right to modify this document without prior notice.
83051400aUK
© Alpha-InnoTec GmbH

LT/LV
UAB TENKO Baltic
Basanaviciaus g. 45
03109 Vilnius
Tel.: +370 526 435 82
Fax: +370 526 435 83
info@tenko.lt
www.tenko.lt

NL
NATHAN Import/Export B.V.
Impact 73
6921 RZ Duiven
Tel.: +31 (0) 26 445 98 45
Fax: +31 (0) 26 445 93 73
info@nathan.nl
www.nathan.nl

NO
Alpha-InnoTec Norge AS
Gamle Forusveien 51b
4033 Stavanger
Tel.: +47 (0) 51 6605 95
Fax: +47 (0) 51 6605 94
info@alpha-innotec.no
www.alpha-innotec.no

PL
Hydro-Tech
ul. Zakładowa 4D
62-510 Konin
Tel.: +48 (0) 63 245 34 79
Fax: +48 (0) 63 242 37 28
hydro@hydro-tech.pl
www.hydro-tech.pl

PT
GudEnergy Energias Renováveis, Lda.
Av. O Século, 21 r/c D.to
2135-231 Samora Correia
Tel.: +351 (0) 263 652 727
Fax: +351 (0) 263 652 526
info@gudenergy.pt
www.gudenergy.pt

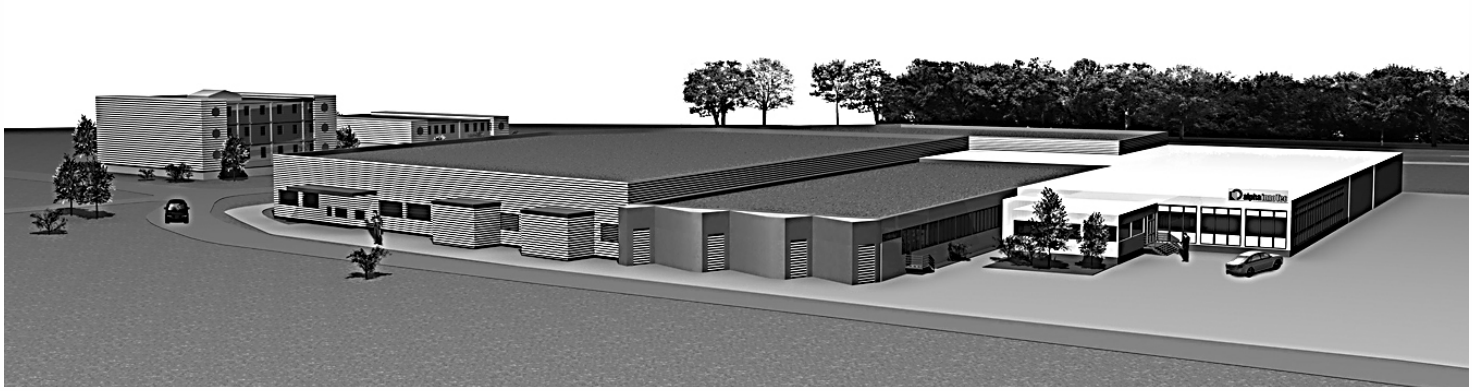
SE
Bjärneroth Teknik
Evas väg 5
280 64 Glimåkra
Tel.: +46 (0) 708 420 544
Fax: +46 (0) 444 222 0
bjarneroth@telia.com
www.btait.se

SI
EkoEnergija d.o.o.
Mače 6
4205 Preddvor
Tel.: +386 (0) 42 555 780
Fax: +386 (0) 42 555 782
info@ekoenergija.eu
www.ekoenergija.eu

UK
Econic Ltd
Marsham
Norwich Road
Norfolk
NR 10 5PQ
Tel.: +44 (0) 16 032 770 40
Fax: +44 (0) 87 091 203 08
info@econicres.com
www.econicres.com

20120803

© Alpha-InnoTec GmbH



DE
Alpha-InnoTec GmbH
Industriestrasse 3
D – 95359 Kasendorf

e-Mail: info@alpha-innotec.com

www.alpha-innotec.com

alphaInnoTec